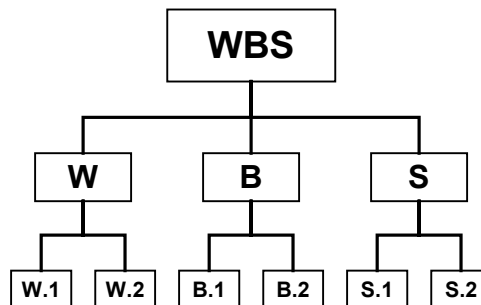


# **Guide to Caltrans Capital Project Work Breakdown Structure**

Release 5.0  
June 2000



## **Published by:**

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Nigel Blampied, Chief



# Forward

In September of 1999, a project team was established to consider change proposals to the standard Work Breakdown Structure (WBS) and publish new version of the Caltrans Capital Project (formerly known as Capital Outlay Support or COS) WBS. The product of this project is the WBS version 5.0 and this guide, titled the Guide to Capital Project Work Breakdown Structure, Release 5.0, May 2000. This guide supersedes the WBS Release 4.0, May 1999.

This Guide provides the updated version (Release 5.0) of the Caltrans Capital Project standard WBS and a new set of WBS definitions as well as general guidelines for project scope planning practices. This version of the WBS will be effective as of July 1, 2000.

The project team thanks all individuals within the districts and headquarters for their support and contribution to the production of this guide.



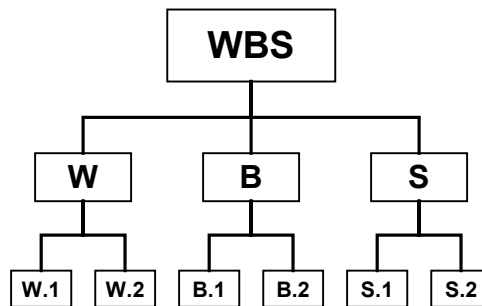
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# Part I

## User Guide







# Introduction

## History and Background

In the early 1990's, several task forces and Peer Reviews recommended the establishment of basic support systems for the implementation of modern project management processes and tools to improve Department's project delivery. Caltrans issued the first version of the Department's Capital Outlay Support (COS) Standard Work Breakdown Structure (WBS) in July 1994.

Subsequent updates to the WBS were published in June 1995 (WBS Release 2.0), in May 1996 (WBS Release 3.0), and in May 1999 (WBS Release 4.0).

The WBS along with the Resource Breakdown Structure (RBS), and the Organizational Breakdown Structure (OBS) provide a complete system for planning and controlling of project work content, cost, schedule, and quality.

Throughout this document references to capital projects specifically mean the Capital Outlay Support. Beginning with this version of the "guide", the name "Capital Outlay Support" or COS has permanently been replaced with Capital Projects or CP.

## Purpose

The purpose of this Guide is to provide information regarding the standard Caltrans' Capital Project WBS, Release 5.0, and its use to plan and control work content of capital projects.

It also presents guidelines for preparing, understanding, and presenting a WBS for a given capital project.

# What is the WBS?

## Definition

Successful project management depends in a large degree on the project manager's ability to specify the work content of the project in terms of its products (deliverables) and activities. One of the principal tools for planning and controlling the work contents of a project is the WBS.

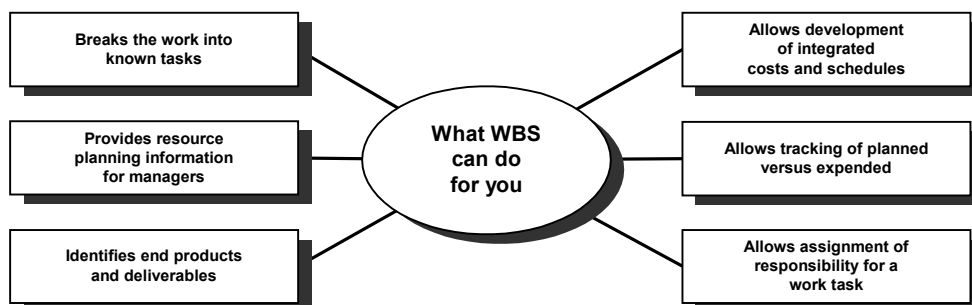
The WBS is a product-oriented grouping of project elements that organizes and defines the total scope of the project. Each descending level represents an increasingly detailed definition of a project component. Project components may be products or services.<sup>1</sup> The WBS defines the work elements, not the staff or resources who will perform the work.

The elements at the bottom of the hierarchy are called work packages (WPs). A WP is a “deliverable at the lowest level of the WBS.”<sup>2</sup> A work package may be divided into activities.<sup>3</sup> Thus, the work contents of the project can be viewed as the set of WPs obtained by applying the WBS.

Caltrans capital projects WBS is a set of standard WPs that represents the scope of any transportation improvement project. The standard is developed to facilitate the planning, execution, and control of individual projects, as well as to provide the same capability for managing groups of projects (programs) on a statewide or district-wide basis.

A standard WBS has many benefits including:

- Consistency of information needed to manage a statewide work force.
- More effective communication relative to project level work throughout the Department.
- Ease of data transfer, such as the sharing of project “templates” between and within districts.
- Decreased “culture shock” when employees transfer to different locations and work assignments.



## Structure

The Structure of WBS is defined by the nature of the levels within the WBS hierarchy. Caltrans standard CP WBS reflects the criteria applied to the hierarchical decomposition of each work element into its parts. The top levels represent the project groupings, by programs, or by Districts responsible for their delivery. Lower levels represent project and project decomposition according to a number of criteria, such as product components, organizational functions, or life-cycle stages.

<sup>1</sup> *PMBOK Guide*, 1996 ed. (Project Management Institute, 1996), sec. 5.3.2.2(3), p. 54

<sup>2</sup> *Ibid.*, sec. 5.3.3.1, p. 56

<sup>3</sup> *Ibid.*

The Caltrans CP WBS is developed by identifying the highest level as Caltrans total work program. Following levels, describe “program” categories or decomposition according to criteria for managing groups of projects. The lower levels breakdown projects into major components (deliverables). Each descending level represents an increasingly detailed description of the level above it. The subdivision continues until the described work element is small enough to be adequately scheduled, resourced, monitored, and managed.

A main principle is that one level is completely described in further detail by the level below it. Each level is a summary of the work in its lower levels. Therefore, it provides for a progressively detailed definition of work elements for all levels of review, such as staff, functional manager, project manager, or program manger. The WBS facilitates summary reporting at a variety of levels.

The coding structure or the numbering scheme that goes along with the WBS allows staff to charge the time spent on roadway projects to the actual tasks they were performing. The same set of codes for tasks is used statewide for all roadway projects. Proper time charging allows managers to track how much projects actually cost Caltrans to produce. Over time, these proper charges for past projects allow more accurate estimating for new projects, as well as better predictions of when the resources are needed to produce a product.

Since proper time charging practice is the responsibility of all Caltrans staff, understanding of the WBS is important to all staff. More information on proper time charging practices with examples is given on page 23.

Although an attempt was made to place the activities generally in the order in which they may occur, the numeric order of the coding is not necessarily the chronological order. There may be an overlap of time between the start dates of activities. Each project manager may vary the order in which a project is developed. A project manager or, in some cases a functional manager, may schedule activity xxx.10 to be completed before activity xxx.05.

The WBS, the coding structure, and the definitions of each activity are not meant to be a blueprint for doing a project. The actual process, governing policies, and procedures are defined in other Caltrans manuals. Those manuals, memos, and guidelines should be consulted for questions about how to do or manage a project.

For your convenience, the Appendix B in Part III of this guide, contain a list of Level 4 and 5 tasks sorted by Level 4. Appendix C contain the same list sorted by Level 5 numeric order.

## **Level of Detail**

The planning phase of a project involves estimating the time and resources required to carry out its work content or to produce the identified work packages in project WBS. This is where decisions are made as to the level of detail in project schedule needed for effective management.

Generally, estimates based on smaller work packages are more accurate. When work is divided into smaller, homogeneous “chunks”, it helps with focusing on the activities involved, providing better information for estimating. Additionally, when estimates are based on smaller work packages, errors in estimating are tend to be less just because of the nature of statistical methods.

For appropriate management of a project, the project manager should ensure that each WP can be assigned to a single person or organizational unit, and that this unit has the ability to deal with all aspects of that WP.

In selecting a level of detail for project WBS, project manager should balance the need to control project deliverables and measuring performance with time spent measuring and reporting progress, resulting in an increase in nonproductive time.

Following is general rules for decomposing project to its detailed components:<sup>4</sup>

- Is there a need to improve the accuracy of the duration or resource requirement (support cost) estimates?
- Is more than one individual responsible for the work contents?
- Does the work content include more than one type of activity (skill/function)?
- Is there a need to know precisely the timing of activities internal to the work package?
- Is there a need to estimate activity resources internal to the work package?
- Are there any dependencies between the internal activities and other work packages? Or are all activities linear within a work package?
- Are there any significant time breaks in the execution of the internal activities?
- Do resource requirements within the work package change over time?
- Do the prerequisites differ among the internal activities?
- Are there any acceptance criteria applicable before the completion of the entire work package?
- Are there any specific risks that require focused attention?

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<sup>4</sup> Tzvi Raz and Shlomo Globerson, "Effective Sizing and Content Definition of Work Packages," *Project Management Journal*, 29-4 (December 1998), 17

# Standard Template (Levels of the WBS)

In order to facilitate summary reporting of work done for Caltrans, the WBS contains several levels of breakdown of the work, starting with Level Ø. Each succeeding level breaks down our work into component parts. Each level represents a summary of the work below it and can be the basis for reporting that gets as detailed as needed.

A graphic representation of the WBS Levels Ø through 5 is shown on the page 9 and may be helpful to summarize the following Levels discussion.

## Level Ø - the Caltrans Level

This top most level of the WBS represents all the work that Caltrans is charged to do by the Legislature.

## Level 1 - the District Level

This level represents all scheduled work performed by a specific charge district and regions. There are five districts (04, 07, 08, 11, 12) and two regions (North Region or 03; and Central Region or 06) and therefore seven components to this level. Each component represented by the two-digit charge district number. The “charge district” is the organizational entity that receives the resources for the work.

## Level 2 - the Program Level

Level 2 is used to separate the work by major program. Currently, the WBS is only developed for Capital Project Program (that is, transportation/highway projects), and the Transportation Planning Program. It is anticipated that there will be additional WBS development for Caltrans’ other programs such as Aeronautics and Mass Transit. This level is not represented separately in time reporting system.

## Level 3 - the Project Level

This level represents the work scheduled for an individual capital project. Capital projects are identified currently by a six-digit field called EA, or expenditure authorization; however, this coding may be changed in the near future to be a project identifier that represents the whole project, not just a source of funding. At the present time, this level is commonly called the “EA level” and the EA is used in time reporting. In some computer systems, the sixth digit is represented by an underbar character for multi-phase projects.

## Level 4 - the Summary Task Level

Level 4 breaks a capital project into a maximum of ten summary tasks. Some projects may not need all ten tasks, however, no capital project will use more than these. While similar to the concept of “phases” of projects, these ten major tasks do not equate to the phases of a project. This level is not used in time reporting.

## Level 5 - the Major Task Level

This level is a breakout of the summary tasks and represents the minimum level of detail required to plan, schedule, and manage capital projects. The code structure for this level is a three-digit number. The Level 5 code number must be shown in the Time Reporting System (TRS) in the “Agency Object” field for any work done on a capital project.

## Level 6, 7, and 8 - the Task and Activity Levels

Level 6, 7, and 8 contain tasks and activities when the Level 5 Major Tasks do not contain sufficient detail to plan, schedule and manage the work. Some Level 6 activities do not need a

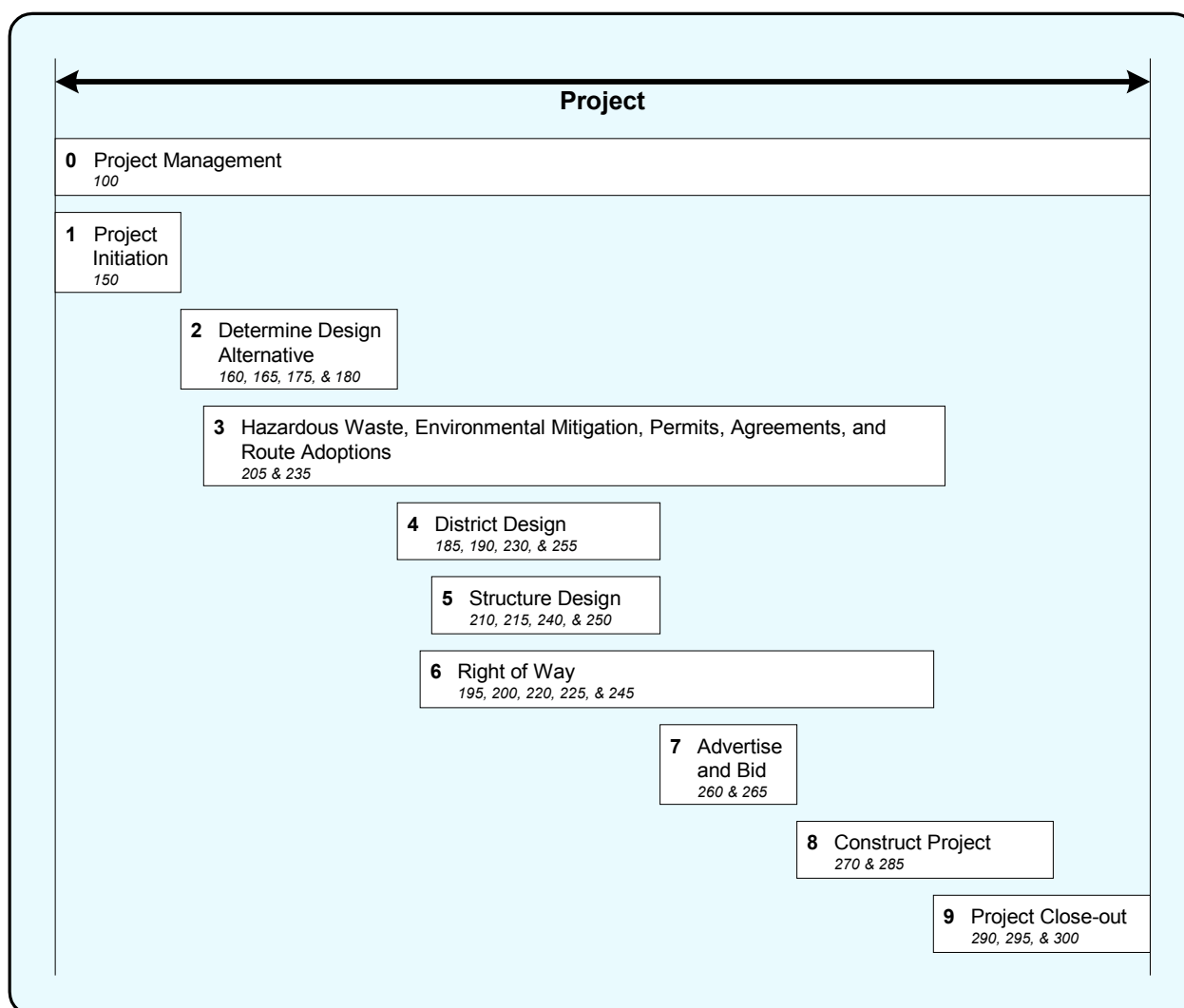
further breakdown to Level 7 at this time, so not all Level 6 activities have a Level 7. The same is true of Level 7 activities, so that not all Level 7 activities have a Level 8.

The identifiers for Level 6, 7, and 8 are 2-digit numeric codes. The identifiers for these levels are entered into the Management System Activities (MSA) field of the TRS with a leading prefix character and without any delimiter between them. See page 18 for an example.

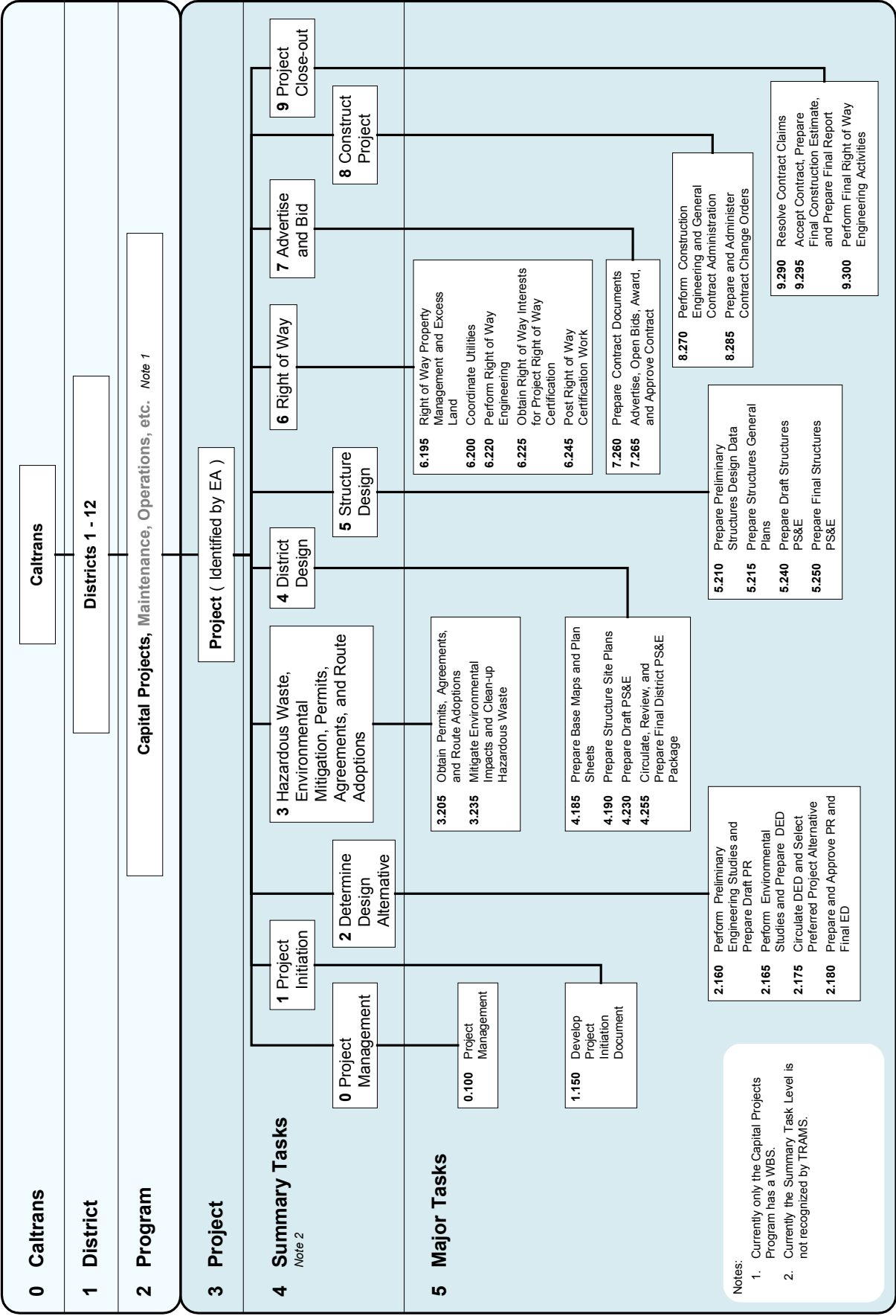
The WBS for capital projects has been standardized to this level of detail for statewide reporting purposes at this time. There is no standardization lower than Level 7, and Level 8 for a few work packages. However, further breakdowns may be used if needed and may be standardized at some future date.

A complete listing of WBS Activities Levels 5, 6, 7, and 8 is provided in the Appendix D.

### Generic Gantt Chart at WBS Level 4



Work Breakdown Structure Diagram



## Plan the Work (Rules for Usage of WBS)

### Determine Level of Detail for Your Project WBS

Each Level is a Complete Summary of Work Below. As work is broken into increasing levels of detail, each level must completely include the total work scope of the WBS element at the next higher level. For instance, the sum of the Level 7 products represents the total work needed to accomplish the superior Level 6 product.

A project manager and functional manager may elect to schedule and monitor portions of a project to a level lower than 5; however, if any of the work of a Level 5 task is scheduled to Level 6, all the work done in that Level 5 task must be scheduled to Level 6. Each Level 5 task must be a complete summary of the Level 6 tasks that will be done on that project. The same is true for scheduling below Level 6.

If this breakdown is not followed, then the summary rollup features provided by this hierarchical system will not work and actual effort spent might be under-reported or over-reported. See previous section on Level of Detail for some general guidelines in preparing your project WBS. Use the bullets as a checklist that provides guidance regarding the need to further decompose the work contents of your project. Consider a given Work Package (WP). If the answers to most of the items in the “checklist” are positive, then further decomposition of the WP should be considered.

### Pseudo Activities:

In order to provide increased scheduling flexibility, two “pseudo” activities are or can be used in the WBS. Both have the same meaning as far as work activities, however, the .95 is standardized in the WBS, and the use of the .99 is up to the Project Manager for an individual project.

#### **.95 - “Other”**

This will appear as a listed activity in the standard WBS. Its usage is limited to those conditions in which the specific listed activities do not include the total work scope of the next higher level WBS element.

For example, under WBS level 6 - “205.10 - Obtain Permits”, are listed several specific permits that are common throughout the state. The activity “205.10.95 - Obtain ‘Other’ Permits” provides for the many other permits that do not have statewide applicability.

Location and description of “.95 - Other” activities within the standard WBS require statewide approval and implementation.

#### **.99 - “All other”**

This activity has been provided as a “wildcard” for use in those conditions in which the Project Manager needs to schedule and track some, but not all, of the standard WBS activities at a given level.

For example, under WBS level 6 - “185.20 - Prepare Engineering Reports”, the Project Manager might decide he or she only needs to track activity “185.20.15 - Prepare Geotechnical Design Report”. “All other” engineering reports would be scheduled under a wildcard activity “185.20.99 - Prepare “All other” Engineering Reports. This wildcard activity would have to be added.

### Network Construction (Logic Diagram)

Work packages are, by definition, the smallest manageable work elements of the project. The building of your project network logic consists of developing dependencies between project WPs that results in a coherent project schedule.



Each project WP has internal activities that are the responsibility of the WP manager. If dependencies among WP activities cross work package (products) boundaries, then the construction of the project network become more complex, and the accuracy of the WBS may be impaired. In general, activities that are interdependent should be assigned to the same WP. This will allow for easier network and workable schedule.

One way of achieving independent WPs in your network maybe by decomposing them further until each WP includes either a single well-defined activity or a small number of tightly interrelated activities.

To establish an effective and manageable project schedule, developing the right work packages is the key. Here are some important attributes for the right work package for a project:<sup>5</sup>

- One clear accomplishment (deliverable)
- One owner
- Easy to identify resources for its completion
- Bounded
- Easy to assess quality
- Unique

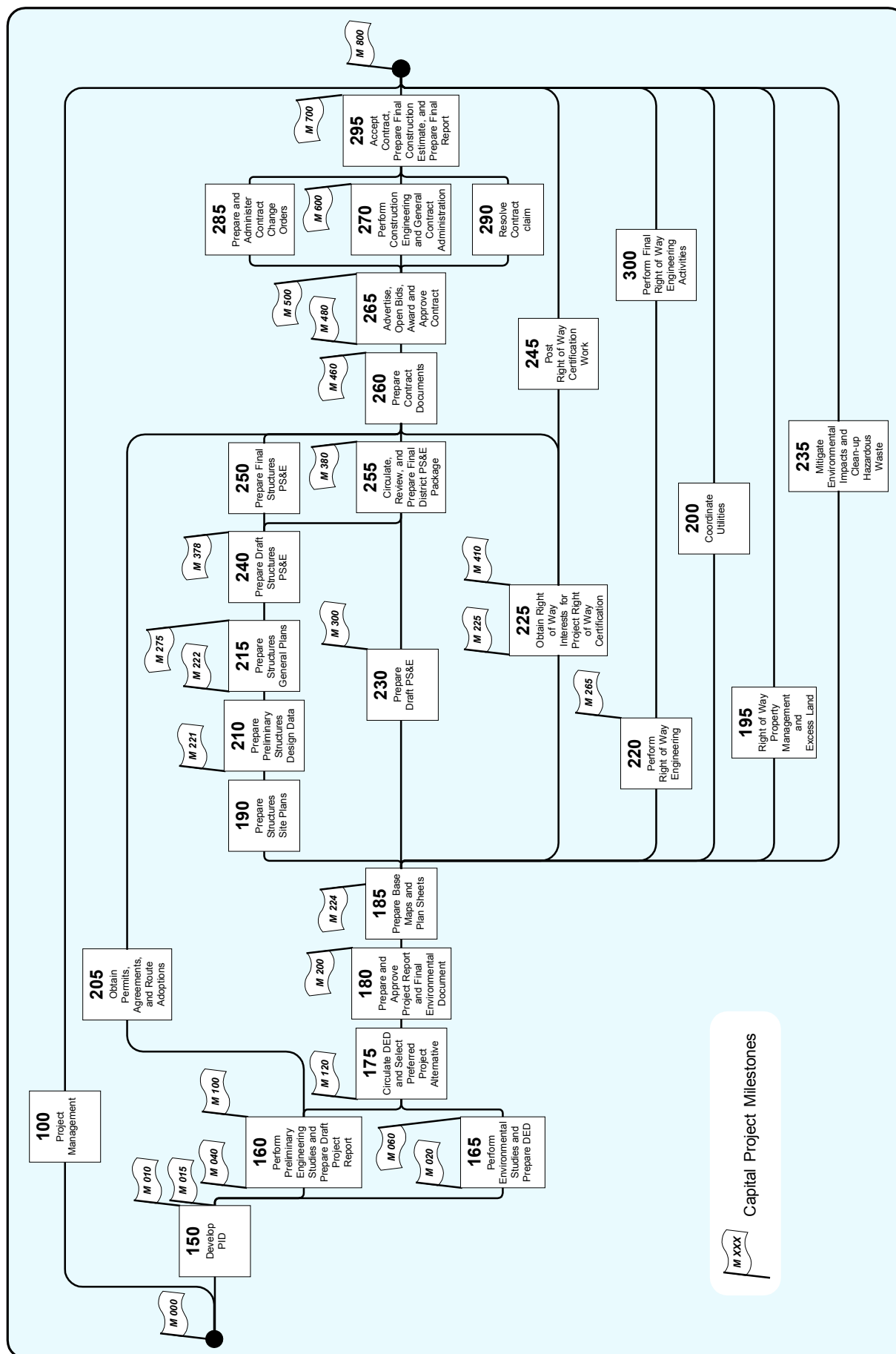
For example, if sub-products of Preliminary Engineering Studies (WBS 160) are dependent on (i.e. have supplier/user relationship) sub-products of Preliminary Environmental Studies for DED (WBS 165), then we should define separate WPs (sub-products at Level 6) for each of those sub-products. This means that our WBS should be defined at Level 6 to be effective.

The next page contains a generic network for a capital project at WBS Level 5.

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<sup>5</sup> Tzvi Raz and Shlomo Globerson, "Effective Sizing and Content Definition of Work Packages," *Project Management Journal*, 29-4 (December 1998), 17

Generic Network at WBS Level 5



## Estimate Project Support Costs (SB45 Requirements)

In 1997 the California State Legislature passed SB45. This amended the rules governing the programming of State transportation projects. It became law as Chapter 622 of the Statutes of 1997.

This section introduces the Program Evaluation and Review Technique (PERT) method for estimating project support costs based on project WBS elements, to address two of the changes brought about by SB45:

- A. Caltrans support costs must now be listed in the STIP in four “components”.
  1. Completion of all permits and environmental studies.
  2. Preparation of plans, specifications, and estimates.
  3. The acquisition of rights-of-way.
  4. Construction management and engineering, including surveys and inspection.
- B. The final combined cost of the four support cost components must be within 20 percent of the combined amount listed in the STIP. If the final cost is more than 120 percent of the estimate, the difference is deducted from the future programming capacity of the agency that programmed the project.

This means that project managers must be confident that the numbers in the STIP are accurate to within 20 percent. PERT is a tool that can be used to achieve this level of confidence.

## Principles of PERT

The Program Evaluation and Review Technique (PERT) was developed in 1958 as a tool for estimating the cost and schedule of nuclear submarines. It is based on three principles:

- A. An expert’s estimate of the cost of a task that takes one day to complete is likely to be more accurate than their estimate of a task that takes a year to complete. The longer and larger the task, the more difficult it is to visualize the effort required.
- B. 99.74 percent of the area under a “normal” distribution curve lies within three standard deviations of the mean.
- C. Given several independent variables ( $a, b, c, \dots, n$ ), each with its own standard deviation, ( $\sigma_a, \sigma_b, \sigma_c, \dots, \sigma_n$ ), the standard deviation of  $(a+b+c+ \dots +n)$ , is the square root of the sum of the squares of the standard deviations  $\sigma_{(a+b+c+ \dots, n)} = (\sigma_a^2 + \sigma_b^2 + \sigma_c^2 + \dots \sigma_n^2)^{0.5}$ .

## PERT Procedure

PERT may be used for estimating project costs or schedules. The PERT process is as follows.

- A. Establish a WBS for the project.
- B. For each lowest-level work package in the WBS, assemble a team of people who have the greatest experience in producing that type of package.
- C. Have each team member develop three estimates for the particular package:
  1. An optimistic estimate (o): The lowest credible cost or schedule assuming that everything goes right.
  2. A most-likely estimate (m): The team member’s best guess of the actual outcome.
  3. A pessimistic estimate (p): The highest credible cost or schedule, assuming that virtually everything goes wrong, but that the team continues working on the project.<sup>6</sup>

<sup>6</sup> If the team stops working on the project, the project will never finish and the highest credible schedule is infinite. For estimating purposes, one must assume that the team continues to work on the project.

- D. Take the lowest (o), the highest (p) and the average (m).
- E. The estimated cost of the work package is  $(o+4m+p)/6$ .
- F. The standard deviation for the work package is  $\sigma_{wp} = (p-o)/6$ .<sup>7</sup>
- G. The standard deviation of the project is  $\sigma_{project} = (\sigma_{wp1}^2 + \sigma_{wp2}^2 + \sigma_{wp3}^2 + \dots + \sigma_{wpn}^2)^{0.5}$ . If one is estimating the schedule, wp1 through wpn are the work packages on the critical path. For costs, wp1 through wpn are all the work packages at the lowest level of the WBS.

### How to use PERT to estimate support costs on a Capital Project (An Example)

See example worksheets on the following pages.

These activities should be performed for each STIP project.

- A. For each Level 5 work package in the Caltrans standard WBS, assemble a three-person team of Caltrans specialists. This team will normally consist of the Functional Manager, the Task Manager and a third person who is an expert in producing the work package. If the Functional Manager doubles as Task Manager, appoint two experts.
- B. Have each team member develop three estimates for the particular package:
  - 1. An optimistic estimate (o): The lowest credible number of person-hours to complete the work package, assuming that everything goes right.
  - 2. A most-likely estimate (m): The team member's best guess of the number of person-hours to complete the work package.
  - 3. A pessimistic estimate (p): The highest credible number of person-hours to complete the work package, assuming that virtually everything goes wrong.
- C. Enter the estimates into the SB45 support cost estimate.
- D. The spreadsheet is set to calculate an upper and lower confidence limit, as a percentage of the project estimate.
- E. If the upper limit is greater than 120 percent or the lower limit is less than 80 percent of the project estimate, refine part of the WBS as follows.
  - 1. Select the Level 5 element that has the largest standard deviation.
  - 2. For that element repeat steps 1 through 5, using level 6 of the Caltrans standard WBS.
- F. Continue the process with lower levels of the WBS until the upper limit is less than 120 percent and the lower limit is more than 80 percent. You can now be as confident as humanly possible that the project estimate accurate within 20 percent.
- G. Enter the hours into scheduling tool you are using (e.g. XPM). The scheduling software (e.g. XPM) will calculate a dollar estimate based upon your hours.
- H. Instruct every employee working on the project to charge their time to the WBS elements that have been entered into the schedule.
- I. Keep regular records of actual hourly expenditures and compare them to the estimates. This will alert you to work that is taking more effort than anticipated and help you to focus attention on the most significant items. It will also improve your estimating ability in the future.

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<sup>7</sup> Derived from the principle that 99.74% of events occur within three standard deviations of the mean.



**SB45 Support Cost Estimate Worksheet (page 2)**

Project No.		Description:		
Project Manager:		Date:		
WBS Level 5	Description	Estimators		
		# 1	# 2	# 3
100	Project Management			
150	Project Initiation Document (PID)			
160	Perform Preliminary Engineering Studies and Prepare Draft Project Report			
165	Perform Environmental Studies and Prepare DED			
175	Circulate DED and Select Preferred Project Alternative			
180	Prepare and Approve Project Report and Final ED			
185	Prepare Base Maps and Plan Sheets			
190	Prepare Structure Site Plans			
195	R/W Property Management and Excess Land			
200	Coordinate Utilities			
205	Obtain Permits, Agreements, and Route Adoptions			
210	Prepare Preliminary Structures Design Data			
215	Prepare Structures General Plans			
220	Perform R/W Engineering			
225	Obtain R/W Interests for Project R/W Certification			
230	Prepare Draft PS&E			
235	Mitigate Environmental Impacts and Clean-up Hazardous Waste			
240	Prepare Draft Structures PS&E			
245	Post R/W Certification Work			
250	Prepare Final Structures PS&E Package			
255	Circulate, Review, and Prepare Final District PS&E Package			
260	Prepare Contract Documents			
265	Advertise, Open Bids, Award, and Approve Contract			
270	Perform Construction Engineering and General Contract Administration			
285	Prepare and Administer Change Orders			
290	Resolve Contract Claims			
295	Accept Contract, Prepare Final Construction Estimate, and Prepare Final Report			
300	Perform Final R/W Engineering Activities			

# Work the Plan

## Time Reporting and Charging Project work using WBS

The Project Manager will determine the minimum level of detail in WBS to which each portion of a project will be scheduled beyond the mandatory Level 5. A functional manager may elect to schedule activities for their portion of the work at a more detailed (lower) level. A single project workplan can consist of Level 5, Level 6, Level 7, and Level 8 activities, as needed for proper managing of the work.

Managers should take care to ensure that staff working on each part of a project (deliverable) understand which level is planned, so that time reporting can be consistent with the desired level. See page 18 for an example of proper time coding.

For example, if a portion of the work is planned only to the WBS Level 5, the time reporting entries must be at least to Level 5.

If scheduled work is to Level 7, time charges must be to Level 7.

Conversely however, if the project schedule is at level 5, time charges may be entered at a lower level (e.g., level 7). This lower level of reporting than is needed will automatically “roll up” to the specified higher level in systems that use TRS.

### Levels Beyond Level 7

Level 8 or Level 9 activities may be added without statewide approval. However, for accuracy, it is suggested that a district or region try to standardize any lower level activities. It should be noted that some Level 6 activities in the standard WBS do not have lower Level 7 activities. In such cases, Level 7 tasks or lower may be added without statewide approval.

### Consultant Oversight versus Caltrans Staff Work:

When an individual is performing oversight of a project activity being done by Others (i.e. Consultants, Local Agency, Etc.), the prefix “O” should be used in the first column of the MSA field on time sheets. Otherwise, the prefix “P” should be used, followed by the appropriate Level 6, 7,...WBS activity code(s).

### Rework Efforts:

New this year is the concept of rework and a methodology for capturing it. Rework is defined as “revisions (errors, omissions, etc..) within the approved scope. When an individual is performing rework activities, the prefix “I” should be used in the first column of the MSA field followed by Level 6, 7,... WBS activity code(s).

## Recording Employee Timesheet (TRS) using WBS

Example: The fictitious employee from District 1 is working on environmental studies for a capital project, specifically the cultural resources studies. The employee has been advised to what level of detail (WBS) the project is planned for this Environmental Studies summary task. Below are the WBS levels for the work involved:

Level 5	165	Perform Environmental Studies and Prepare DED
Level 6	165.20	Perform Cultural Resources Studies
Level 7	165.20.10	Perform Extended Phase I Archeological Studies
Level 8	165.20.10.05	Conduct Native American Consultation

**CALTRANS** **TIME REPORTING** Page 1 of 1 012D  
**CALVIN TRANS** Employee ID 12345

I WAS VERY BUSY ON FRIDAY.  
 Week of May 09 Mon. 10 Tue. 11 Wed. 12 Thr. 13 Fri. 14 Sat. 15  
 that is open Off Off

Day	Hours	Pay	Lev	Rel	EZ	CC	Chg. Dist	EA	Sub Job	Spec	Desg	FA	A0	MSA	EZ	Save
10	08.0	R			A_		01	291700				1	165			
11	08.0	R			B_		01	291700				1	165	P20		
12	08.0	R			C_		01	291700				1	165	P2010		
13	04.0	R			D_		01	291700				1	165	P201005		
13	04.0	R					01	291700				2	165	0		
14	04.0	R					01	291700				2	165	020		
14	04.0	R					01	291700				2	165	02010		

Day LvHrs - Lev Rel- - - - - (Reason for Absence)

\* F7-Pg Bwd \* F8-Pg Fwd \* F9-Totals \* F10-Pay Cd \* F11-Lv Cd \* F12-Rel Cd

\* F1-Help \* F2-EZ/CC Code \* F4-Send Supvs \* F5-Leave Bal

Make entries. Put cursor at your selection. Press Enter. \* F3-Exit

3270 Display 10:19 Caps Hold On Line

- May 10 - 8 hours of Environ Study charged to project EA 291700 at Level 5.
- May 11 - 8 hours of Cultural Resource Studies charged to project EA 291700 at Level 6.
- May 12 - 8 hours of Extended Phase I Archaeological Studies charged to project EA 291700 at Level 7.
- May 13 - 4 hours of Conduct Native American Consultation charged to project EA 291700 at Level 8.
- May 13 - 4 hours of Oversight of Others (i.e. Consultant, Local Agency, etc.) performing Environ Study charged to project EA 291700 at Level 5.
- May 14 - 4 hours of Oversight of Others (i.e. Consultant, Local Agency, etc.) performing Cultural Resource Studies charged to project EA 291700 at Level 6.
- May 14 - 4 hours of Oversight of Others (i.e. Consultant, Local Agency, etc.) performing Extended Phase I Archaeological Studies charged to project EA 291700 at Level 7.



## CAPITAL PROJECTS EA PHASE TO ACTIVITY CODE (WBS LEVEL 5) CORRELATION

May 1999

The following table shows acceptable EA phase-to-Activity Code (WBS Level 5) combinations when recording direct labor charges to Capital Project Multi-phase EAs (0XXXXX-4XXXXX) in Time Reporting System (TRS).

If last character of the EA is:	The Activity Code (AO) should be one of the following:	IF NOT, TRS displays Error Message:
<b>K</b>	100 - Project Management 150 - Project Initiation Document (PID) 205 - Obtain Permits, Agreements, and Route Adoptions 235 - Mitigate Environmental Impacts & Clean-up Hazardous Waste	<b>“Warning AO 100 150 205 235 Expected”</b>  Check with your supervisor to verify that you are using the appropriate EA Phase/activity code.
<b>0</b>	100 - Project Management 160 - Perform Preliminary Engineering Studies and Prepare Draft Project Report 165 - Perform Environmental Studies and Prepare DED 175 - Circulate DED and Select Preferred Project Alternative 180 - Prepare and Approve Project Report and Final ED 205 - Obtain Permits, Agreements, and Route Adoptions 235 - Mitigate Environmental Impacts & Clean-up Hazardous Waste	<b>“Warning AO 100 160 165 175 180 205 235 Expected”</b>  Check with your supervisor to verify that you are using the appropriate EA phase/activity code.
<b>1</b>	100 - Project Management 185 - Prepare Base Maps and Plan Sheets 190 - Prepare Structures Site Plans 200 - Coordinate Utilities 205 - Obtain Permits, Agreements, and Route Adoptions 210 - Prepare Preliminary Structures Design Data 215 - Prepare Structures General Plans 230 - Prepare Draft PS&E 235 - Mitigate Environmental Impacts & Clean-up Hazardous Waste 240 - Prepare Draft Structures PS&E 250 - Prepare Final Structures PS&E Package 255 - Circulate, review, and Prepare Final District PS&E Package 260 - Prepare Contract Documents 265 - Advertise, Open Bids, Award, and Approve Contract	<b>“Warning AO 100 185 190 200 205 210 215 230 235 240 250 255 260 265 Expected”</b>  Check with your supervisor to verify that you are using the appropriate EA phase/activity code.
<b>2</b>	100 - Project Management 195 - R/W Property Management and Excess Land 200 - Coordinate Utilities 205 - Obtain Permits, Agreements, and Route Adoptions 220 - Perform Right of Way Engineering 225 - Obtain R/W Interests for Project R/W Certification 235 - Mitigate Environmental Impacts & Clean-up Hazardous Waste 245 - Post R/W Certification Work 300 - Perform Final R/W Engineering Activities	<b>“Warning AO 100 195 200 205 220 225 235 245 300 Expected”</b>  Check with your supervisor to verify that you are using the appropriate EA phase/activity code.
<b>3</b>	100 - Project Management 205 - Obtain Permits, Agreements, and Route Adoptions 235 - Mitigate Environmental Impacts & Clean-up Hazardous Waste 270 - Perform Construction Engineering and General Contract Administration 285 - Prepare and Administer Contract Change Orders 290 - Resolve Contract Claims 295 - Accept Contract, Prepare Final Construction Estimate, and Prepare Final Report	<b>“Warning AO 100 205 235 270 285 290 295 Expected”</b>  Check with your supervisor to verify that you are using the appropriate EA phase/activity code.

## Sample Employee Timesheet with HIGHLIGHTED warning message (in white).

**CALTRANS** **TIME REPORTING** Page 1 of 1 012D  
IAN RHODES

TESTING PROJECT MANAGEMENT WBS EDITS

Week of December 06 07 08 09 10 11 12  
that is open

Day	Hours	Pay	Lev	Rel	EZ	CC	Chg. Dist	EA	Sub Job	Spec	Desg	FA	A0	MSA	EZ Save
07	08.0	R					04	002821				1	220		
08	08.0	R					04	002821				1	230		
09	08.0	R					04	002821				1	255		
10	08.0	R					04	002821				1	205		
11	08.0	R					04	002821				1	235		

Day LvHrs - Lev Rel - - - - - (Reason for Absence) - - - - -

\* F7-Pg Bwd \* F8-Pg Fwd \* F9-Totals \* F10-Pay Cd \* F11-Lv Cd \* F12-Rel Cd

\* F1-Help \* F2-EZ/CC Code \* F4-Send Supvs \* F5-Leave Bal

Make entries. Put cursor at your selection. Press Enter. \* F3-Exit

Warning A0 100 185 190 200 205 210 215 230 235 240 250 255 260 265 Expected

14/002

F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12

3270 Display 14:2 Caps Hold On Line

In this example, Phase “1” of the Project EA is incompatible with WBS Level 5 (Activity Object) code 220 and the warning message has appeared. The employee has three choices:

1. Employee chooses a compatible activity code from the list provided
2. Employee changes the EA phase
3. OR, the employee submits uncorrected timesheet to supervisor. If employee submits timesheet with error, the “warning message” will be forwarded to his/her supervisor.

More about this TRS feature:

Employee should also consult the EA Phase-to-Activity Code correlation table for Capital Projects provided above for correct combinations. Or consult supervisor for any questions.

If employee timesheet has multiple errors, each line that has failed the acceptable combinations will be highlighted. However, only one “warning” will appear on the screen, which will relate to the first erroneous (highlighted) entry.

As the employee corrects the errors, the highlighted fields will be eliminated and warning message will address the next error and so on.

## Sample Summary Sheet of Employee Timesheet for Supervisor.

**CALTRANS** **EMPLOYEE REVIEW** Page 18 of 18 0120

Dec '98	Late	Off.06	Mon.07	Tue.08	Wed.09	Thu.10	Fri.11	Off.12	Week
Regular Hours			8.0	8.0	8.0	8.0	8.0		40.0
Leave Hours									
Overtime Hours									

Ian Rhodes | Source D/U: 20/085 ? | Hrs: 40.0 | Approval = Y/N

**ALERT WARNING** AO 100 185 190 200 205 210 215 230 235 240 250 255 260 265 EXPEC

\* PF1-Help \* PF2-List \* PF4-Send \* PF7-Pg Bwd \* PF8-Pg Fwd  
 Detail: \* PF9-1st \* PF3-Exit

F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12

3270 Display 6:80 Caps Hold On Line 06/080

In this example, the system alerts supervisors with same warning message given to employees, about the incompatible “AO” data

- If employee submits incorrect timesheet with incompatible EA phase-to-Activity Code combinations, the “alert” will be forwarded to supervisor.
- Supervisor summary sheet, titled “employee review” will show the “alert” on screen for each erroneous timesheet.
- For detail, supervisors access (F9) the full timesheet for specific errors. Supervisors have the responsibility to advise/educate staff regarding correct EA phase-to-Activity Code correlation, and to ensure that employees charge their time correctly.

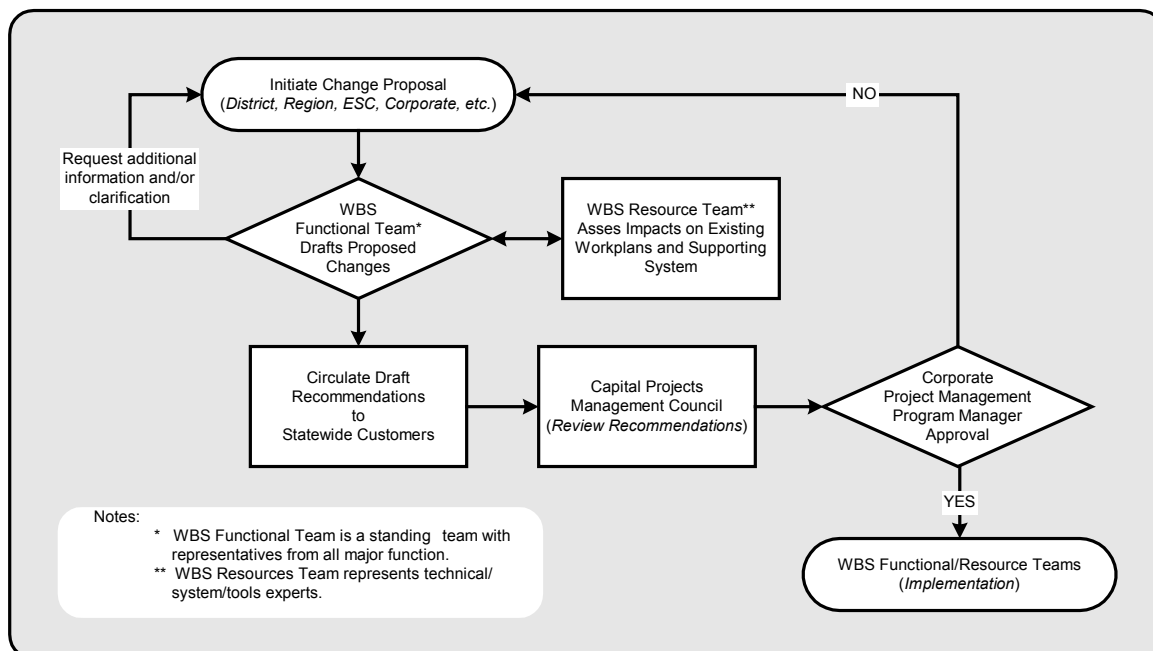
## WBS Change Control Process

Just as every thing in life, changes are inevitable and the WBS will need upgrading in the future to meet the changing business environment in which we operate. This guide contains the WBS Change Process which the Project Management Program has established for any future revisions or modifications of the standard WBS.

This process is implemented as of the date of this publication. The process is as follows:

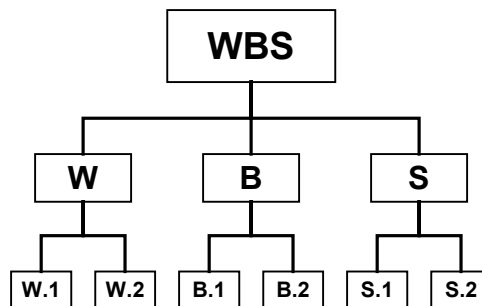
1. Anyone from the Districts, Regions, Engineering Service Center (ESC), or Headquarters programs working on capital projects, may prepare a WBS Change Request to propose a change to the standard WBS structure, products or definitions of products. Requester may contact the Corporate Project Management Program for an electronic WBS Change Request form. A completed form should be submitted electronically to the HQ Project Management Program, Office of Project Management Process Improvement.
2. It is anticipated that a project manager will be assigned to manage this process annually. WBS Functional and Resource Teams will analyze, evaluate, and draft Change Recommendations.
3. Customers (as defined by project teams), who normally include but are not limited to statewide project managers, functional managers, project management support units, review Draft Recommendations.
4. WBS Functional and Resource Teams respond and resolve any issues following the circulation of the Draft Recommendations, and plan for implementation of the proposed changes.
5. Proposed Recommendations with an appropriately detailed implementation plan will be presented to the Capital Projects Management Council (CPMC) for initial approval.
6. The Corporate Project Management Program Manager will review and provide the final approval.
7. The project manager and project teams will begin implementation of the approved changes

### WBS Change Control Process



# Part II

## WBS Definitions





# Definition Guide

Part II is the dictionary that provides the Capital Project WBS element definitions. The WBS elements are organized by their code structure, with the major sections based on the Level 5 coding. Appendix D has been provided as a quick reference to WBS elements. It contains all the WBS elements listed by their code.

## WBS Definition Format

The definition given for each WBS element is a generic description of work represented by the element. These definitions are not intended to be all inclusive of every work activity that must be accomplished. Thus the phrases, “All work involved in...” or “Includes...” were used instead of an exhaustive list of sub-tasks.

These definitions also do not describe the processes required to accomplish the work. The processes are described elsewhere in various Caltrans guidance documents (e.g., manuals, memos, policy directives, etc.).

With few exceptions, a list of guidance documents is provided for each WBS activity (i.e., the lowest WBS level). Also provided is a list of the RBS units that are normally assigned to the WBS work.

### Level 5 tasks

An overall description of the work is provided for the Major Task level.

### Level 6 activities

A description of the work and a list of end products are provided. It may be supplemented by a bullet list of sub-tasks to further clarify what is covered by this activity. This bullet list may be used to develop Level 7 activities where a manager determines it is necessary to decompose this activity to more detailed levels. Guidance and RBS information is also generally given.

### Level 6 tasks

A description of the work is provided, and most have one or more end products for the task listed.

### Level 7 activities

Many Level 7 activities are fairly small and self-definable, such as 160.05.05 “Review Approved PID”. In these instances no description is provided.

Other Level 7 activities are still relatively large or they are lesser known activities that require more information than their title alone provides. For example, 185.15.05 “Perform Roadway and Misc. Design” or 235.05.15 “Perform Biological Mitigation” both need further description of the work.

It may be supplemented by a bullet list of sub-tasks to further clarify what is covered by this activity. This bullet list may be used to develop Level 8 activities where a manager determines it is necessary to decompose this activity to more detailed levels. In some cases one or more end products for the activity are listed.

Guidance and RBS information is also generally given.

### Level 7 tasks

A description of the work is provided if needed, and most have one or more end products for the task listed.

### **Level 8 activities**

Many Level 8 activities are fairly small and self-definable, such as 160.20.05.25 “Prepare Archaeological Survey Report (ASR)”. In these instances no description is provided.

Other Level 8 activities are still relatively large or they are lesser known activities that require more information than their title alone provides. For example, 285.10.xx.05 “Perform Field Surveys for CCO” needs further description of the work.

Guidance and RBS information is generally given.

### **Beyond Level 6, 7, or 8 activities**

When a manager wishes to decompose an area of a project to a level more detailed than lowest WBS level provided, and a bullet list of sub-tasks is given, the bullet list may be used to develop Level 8 activities.



# 100 Project Management

The management of the project from initiation through completion. The services provided include initiation, planning, execution, control, and close out of projects.

## 100.05 Project Management - PID Phase

The management of the PID phase from initiation through completion. The services provided include the initiation and planning of the project, and the execution, control, and close out of the phase.

### 100.05.05 Project Initiation and Planning

The management of the PID phase from initiation through completion. The services provided include the initiation and planning of the project, and the execution, control, and close out of the phase.

#### Guidance

*A Guide to the Project Management Body of Knowledge (PMBOK)*  
*Caltrans Service Contracts Manual; Chapters 1-7, 12, & 17*  
*Project Development Procedures Manual (PDPM)*  
*Project Development Workflow Tasks Manual (PDWTM)*  
*Project Management Control System (PMCS) User Manual*  
*Project Management Data Warehouse Handbook*  
*Project Management Directives; PMD's 99-01, 99-02, 99-03, & 99-04*  
*Project Management Handbook*  
*Project Management Memo; Dated 10/23/98 by John A. Boda*  
*Project Management Memo; Dated 11/20/96 by James Van Loben Sels*  
*Project Management Memo; Dated 9/13/99 by John A. Boda*  
*Project Resource Data Management Guide*  
*Work Breakdown Structure (WBS)*  
*Workload Estimating Norms (WEN) Capital Outlay Estimating Tool*  
*XPM Information; XPM Transactions, XPM Training Manual, Abbreviated Task Name, & Cost Center to XPM Resource ID Conversion*

#### RBS

100-104  
 105-139  
 140-143  
 144  
 All \*

\* Potentially all RBS units could work on this WBS. It is dependent on the specific project.

#### Sub-Tasks:

- Assign project manager.
- Establish expenditure authorization (EA) for Phase K.
- Develop charter for PID. This document should identify the purpose and need for the project, the type of PID to be developed, possible funding source(s), constraints, and assumptions. It should incorporate by reference any agreements with the sponsors (local agencies, maintenance, etc.).
- Enter project into project management database system(s) (XPM, PMCS, etc.).
- Develop Workplan (resourced schedule). Includes the projects scope, cost, and schedule elements.
- Develop Quality Management Plan.
- Develop Communication Management Plan.
- Develop Risk Management Plan.
- Develop Resource Management Plan (staff and procurement).
- Work agreements for staff resources for the PID phase.
- Scope of work for procurement of A&E contracts/agreements for the PID phase.

#### End Product:

Project Management Plan (detailed for PID phase, summary for the remaining project phases).

### 100.05.10 PID Phase Execution and Control

The process of coordinating people and other resources to carry out the plan, and ensuring that the PID phase objectives are being met by monitoring progress and taking corrective action when necessary.

#### Guidance

*A Guide to the Project Management Body of Knowledge (PMBOK); Part I, Chapter 3 & Part II*

*Caltrans Service Contracts Manual; Chapters 1-7, 12, & 17*

*Project Development Procedures Manual (PDPM)*

*Project Development Workflow Tasks Manual (PDWTM)*

*Project Management Control System (PMCS) User Manual*

*Project Management Data Warehouse Handbook*

*Project Management Directives; PMD's 99-01 & 99-03*

*Project Management Handbook*

*Project Management Memo; Dated 9/13/99 by John A. Boda*

*Project Management Memo; Dated 10/23/98 by John A. Boda*

*Project Resource Data Management Guide*

*Work Breakdown Structure (WBS); Work the Plan & WBS Task Definitions, WBS 100, 150*

*XPM Information; Abbreviated Task Name, XPM Transactions, XPM Training Manual, & Cost Center to XPM Resource ID Conversion*

\* Potentially all RBS units could work on this WBS. It is dependent on the specific project.

#### RBS

105-139

140-143

144

345-348

All \*

#### Sub-Tasks:

- Status project. Includes the entire status process from reporting work results to updating databases. Includes updating and revising workplan during PID phase execution.
- Communication and distribution of project records and information. Includes responses to all internal and external requests for information about the project.
- Quality assurance / Quality control
- Procurement of resources through A&E contracts, interagency and cooperative agreements, etc. for the PID phase. Includes the following:
  - Request for Qualifications (RFQ) or Proposal (RFP).
  - Selection of consultant.
  - Contract negotiation.
  - Contract execution.
  - Contract management.

#### End Product:

PID phase products are completed.

### 100.05.15 PID Phase Close Out

The process of formally bringing the PID phase to an end.

#### Guidance

*A Guide to the Project Management Body of Knowledge (PMBOK); Part I, Chapter 3 & Part II, Chapter 10, Section 10.4 & Chapter 12, Section 12.6*

*Caltrans Service Contracts Manual; Chapters 4, 7, & 17*

*Project Management Control System (PMCS) User Manual*

*Project Management Data Warehouse Handbook*

*Project Management Directives; PMD's 99-01, 99-03 & 99-04*

*Project Management Handbook; Chapter 3, Sections 6-7 & Chapter 4, Section 1*

*Project Resource Data Management Guide*

\* Potentially all RBS units could work on this WBS. It is dependent on the specific project.

#### RBS

105-139

140-143

144

345-348

All \*

**Sub-tasks:**

- Finalize any contracts or agreements that are completed.
- Sponsor, team, and stakeholder evaluations of the PID phase.
- Document lessons learned from the PID phase.
- PID Phase close out report.
- Close PID phase expenditure authorization (EA).

**End Product:**

PID phase is complete.

**100.10 Project Management - PA & ED Phase**

The management of the PA&ED phase from initiation through completion. The services provided include the initiation, planning, execution, control, and close-out of the phase.

**100.10.05 PA&ED Phase Initiation and Planning**

The process of formally recognizing that the project should continue into the PA&ED phase and the process of updating the plan to guide the execution and control of the phase. This plan should cover the PA&ED phase in detail, while the remaining phases of the project are planned at a summary level (i.e., rolling wave planning).

**Guidance**

*A Guide to the Project Management Body of Knowledge (PMBOK)*

*Caltrans Service Contracts Manual; Chapters 1, 12, & 17*

*Project Development Procedures Manual (PDPM)*

*Project Development Workflow Tasks Manual (PDWTM)*

*Project Management Control System (PMCS) User Manual*

*Project Management Data Warehouse Handbook*

*Project Management Directives; PMD's 99-01, 99-02, 99-03, & 99-04*

*Project Management Handbook*

*Project Management Memo; Dated 10/23/98 by John A. Boda*

*Project Resource Data Management Guide*

*Work Breakdown Structure (WBS)*

*Workload Estimating Norms (WEN) Capital Outlay Estimating Tool*

*XPM Information; XPM Training Manual, XPM Transactions, Abbreviated Task Name, & Cost Center to XPM Resource ID Conversion*

**RBS**

105-139

140-143

144

345-348

All \*

\* Potentially all RBS units could work on this WBS. It is dependent on the specific project.

**Sub-tasks:**

- Establish expenditure authorization (EA) for the PA&ED Phase
- Develop charter for the PA&ED phase. In most cases the PID may serve as the charter for the PA&ED phase.
- Update records in project management database system(s) (XPM, PMCS, etc.) for PA&ED phase.
- Update Workplan (resourced schedule) for the PA&ED phase. Includes the projects scope, cost, and schedule elements.
- Update Quality Management Plan for the PA&ED phase.
- Update Communication Management Plan for the PA&ED phase.
- Update Risk Management Plan for the PA&ED phase.
- Update Resource Management Plan (staff and procurement) for the PA&ED phase.
- Work agreements for staff resources the PA&ED phase.
- Scope of work for procurement of A&E contracts/agreements for the PA&ED phase.

**End Product:**

Updated Project Management Plan (detailed for the PA&ED phase, summary for the remaining project phases).

### 100.10.10 PA&ED Phase Execution and Control

The process of coordinating people and other resources to carry out the plan, and ensuring that the PA&ED phase objectives are being met by monitoring progress and taking corrective action when necessary.

#### Guidance

*A Guide to the Project Management Body of Knowledge (PMBOK); Part I, Chapter 3, & Part II*

*Caltrans Service Contracts Manual; Chapters 1-7, 12, & 17*

*Project Development Procedures Manual (PDPM)*

*Project Development Workflow Tasks Manual (PDWTM)*

*Project Management Control System (PMCS) User Manual*

*Project Management Data Warehouse Handbook*

*Project Management Directives; PMD's 99-01 & 99-03*

*Project Management Handbook*

*Project Management Memo; Dated 10/23/98 by John A. Boda*

*Project Resource Data Management Guide*

*Work Breakdown Structure (WBS); Work the Plan WBS & Task Definitions, WBS 100, 160-180*

*XPM Information; XPM Training Manual, XPM Transactions, Abbreviated Task Name, & Cost Center to XPM Resource ID Conversion*

#### RBS

105-139

140-143

144

345-348

All \*

\* Potentially all RBS units could work on this WBS. It is dependent on the specific project.

#### Sub-tasks:

- Status project. Includes the entire status process from reporting work results to updating databases. Includes updating and revising workplan during PA&ED phase execution.
- Communication and distribution of project records and information. Includes responses to all internal and external requests for information about the project.
- Quality assurance / Quality control
- Procurement of resources through A&E contracts, interagency and cooperative agreements, etc. for the PA&ED phase. Includes the following:
  - Request for Qualifications (RFQ) or Proposal (RFP).
  - Selection of consultant.
  - Contract negotiation.
  - Contract execution.
  - Contract management.

#### End Product:

PA&ED phase products are completed.

### 100.10.15 PA&ED Phase Close Out

The process of formally bringing the PA&ED phase to an end.

#### Guidance

*A Guide to the Project Management Body of Knowledge (PMBOK); Part I, Chapter 3 & Part II, Chapter 10, Section 10.4 & Chapter 12, Section 12.6*

*Caltrans Service Contracts Manual; Chapters 4, 7, & 17*

*Project Management Control System (PMCS) User Manual*

*Project Management Data Warehouse Handbook*

*Project Management Directives; PMD's 99-01, 99-03, & 99-04*

*Project Management Handbook; Chapter 3, Sections 6-7 & Chapter 4, Section 1*

*Project Management Memo; Dated 10/23/98 by John A. Boda*

*Project Resource Data Management Guide*

#### RBS

105-139

140-143

144

345-348

All \*

\* Potentially all RBS units could work on this WBS. It is dependent on the specific project.

**Sub-tasks:**

- Finalize any contracts or agreements that are completed.
- Sponsor, team, and stakeholder evaluations of the PA&ED phase.
- Document lessons learned from the PA&ED phase.
- PA&ED Phase close out report.
- Close PA&ED phase expenditure authorization (EA).

**End Product:**

PA&ED phase is complete.

**100.15 Project Management - PS&E Phase**

The management of the PS&E phase from initiation through completion. The services provided include the initiation, planning, execution, control, and close out of the phase.

**100.15.05 PS&E Phase Initiation and Planning**

The process of formally recognizing that the project should continue into the PS&E phase and the process of updating the plan to guide the execution and control of the phase. This plan should cover the PS&E phase in detail, while the remaining phases of the project are planned at a summary level (i.e., rolling wave planning).

**Guidance**

*A Guide to the Project Management Body of Knowledge (PMBOK)*  
*Caltrans Service Contracts Manual; Chapters 1-7, 12, & 17*  
*Project Development Procedures Manual (PDPM)*  
*Project Development Workflow Tasks Manual (PDWTM)*  
*Project Management Control System (PMCS) User Manual*  
*Project Management Data Warehouse Handbook*  
*Project Management Directives; PMD's 99-01, 99-02, 99-03, & 99-04*  
*Project Management Handbook*  
*Project Management Memo; Dated 10/23/98 by John A. Boda*  
*Project Management Memo; Dated 9/13/99 by John A. Boda*  
*Project Resource Data Management Guide*  
*Work Breakdown Structure (WBS)*  
*Workload Estimating Norms (WEN) Capital Outlay Estimating Tool*  
*XPM Information; XPM Training Manual, XPM Transactions, Abbreviated Task Name, & Cost Center to XPM Resource ID Conversion*

**RBS**

105-139  
 140-143  
 144  
 345-348  
 All \*

\* Potentially all RBS units could work on this WBS. It is dependent on the specific project.

**Sub-tasks:**

- Establish expenditure authorization (EA) for the PS&E Phase
- Develop charter for the PS&E phase. In most cases the approved Environmental Document and/or the Project Report may serve as the charter for the PS&E phase.
- Update records in project management database system(s) (XPM, PMCS, etc.) for PS&E phase.
- Update Workplan (resourced schedule) for the PS&E phase. Includes the projects scope, cost, and schedule elements.
- Update Quality Management Plan for the PS&E phase.
- Update Communication Management Plan for the PS&E phase.
- Update Risk Management Plan for the PS&E phase.
- Update Resource Management Plan (staff and procurement) for the PS&E phase.
- Work agreements for staff resources the PS&E phase.
- Scope of work for procurement of A&E contracts/agreements for the PS&E phase.

**End Product:**

Updated Project Management Plan (detailed for the PS&E phase, summary for the remaining project phases).

### 100.15.10 PS&E Phase Execution and Control

The process of coordinating people and other resources to carry out the plan, and ensuring that the PS&E phase objectives are being met by monitoring progress and taking corrective action when necessary.

#### Guidance

*A Guide to the Project Management Body of Knowledge (PMBOK); Part I, Chapter 3 & Part II*

*Caltrans Service Contracts Manual; Chapters 1-7, 12, & 17*

*Project Development Procedures Manual (PDPM)*

*Project Development Workflow Tasks Manual (PDWTM)*

*Project Management Control System (PMCS) User Manual*

*Project Management Data Warehouse Handbook*

*Project Management Directives; PMD's 99-01 & 99-03*

*Project Management Handbook*

*Project Management Memo; Dated 10/23/98 by John A. Boda*

*Project Management Memo; Dated 9/13/99 by John A. Boda*

*Project Resource Data Management Guide*

*Work Breakdown Structure (WBS); Work the Plan & WBS Task Definitions, WBS 100, 185-260*

*XPM Information; XPM Training Manual, XPM Transactions, Abbreviated Task Name, & Cost Center to XPM Resource ID Conversion*

#### RBS

105-139

140-143

144

345-348

All \*

\* Potentially all RBS units could work on this WBS. It is dependent on the specific project.

#### Sub-tasks:

- Status project. Includes the entire status process from reporting work results to updating databases. Includes updating and revising workplan during PS&E phase execution.
- Communication and distribution of project records and information. Includes responses to all internal and external requests for information about the project.
- Quality assurance / Quality control
- Procurement of resources through A&E contracts, interagency and cooperative agreements, etc. for the PS&E phase. Includes the following:
  - Request for Qualifications (RFQ) or Proposal (RFP).
  - Selection of consultant.
  - Contract negotiation.
  - Contract execution.
  - Contract management.

#### End Product:

PS&E phase products are completed.

### 100.15.15 PS&E Phase Close Out

The process of formally bringing the PS&E phase to an end.

#### Guidance

*A Guide to the Project Management Body of Knowledge (PMBOK); Part I, Chapter 3 & Part II, Chapter 10, Section 10.4 & Chapter 12, Section 12.6*  
*Caltrans Service Contracts Manual; Chapters 4, 7, & 17*  
*Project Management Control System (PMCS) User Manual*  
*Project Management Data Warehouse Handbook*  
*Project Management Directives; PMD's 99-01, 99-03, & 99-04*  
*Project Management Handbook; Chapter 3, Sections 6-7 & Chapter 4, Section 1*  
*Project Management Memo; Dated 10/23/98 by John A. Boda*  
*Project Resource Data Management Guide*

#### RBS

105-139  
 140-143  
 144  
 345-348  
 All \*

\* Potentially all RBS units could work on this WBS. It is dependent on the specific project.

#### Sub-tasks:

- Finalize any contracts or agreements that are completed.
- Sponsor, team, and stakeholder evaluations of the PS&E phase.
- Document lessons learned from the PS&E phase.
- PS&E Phase close out report.
- Close PS&E phase expenditure authorization (EA).

#### End Product:

PS&E phase is complete.

## 100.20 Project Management - Construction Phase

The management of the Construction phase from initiation through completion. The services provided include the initiation, planning, execution, control of the phase, and close out of the project.

### 100.20.05 Construction Phase Initiation and Planning

The process of formally recognizing that the project should continue into the Construction phase and the process of updating the plan to guide the execution and control of the phase. This plan should cover the Construction phase in detail.

#### Guidance

*A Guide to the Project Management Body of Knowledge (PMBOK)*  
*Caltrans Service Contracts Manual; Chapters 1-7, 12, & 17*  
*Project Development Procedures Manual (PDPM)*  
*Project Development Workflow Tasks Manual (PDWTM)*  
*Project Management Control System (PMCS) User Manual*  
*Project Management Data Warehouse Handbook*  
*Project Management Directives; PMD's 99-01, 99-02, & 99-03*  
*Project Management Handbook*  
*Project Management Memo; Dated 10/23/98 by John A. Boda*  
*Project Resource Data Management Guide*  
*Work Breakdown Structure (WBS)*  
*Workload Estimating Norms (WEN) Capital Outlay Estimating Tool*  
*XPM Information; XPM Training Manual, XPM Transactions, Abbreviated Task Name, & Cost Center to XPM Resource ID Conversion*

#### RBS

105-139  
 140-143  
 144  
 345-348  
 All \*

\* Potentially all RBS units could work on this WBS. It is dependent on the specific project.

#### Sub-tasks:

- Establish expenditure authorization (EA) for the Construction Phase
- Develop charter for the Construction phase. In most cases the construction contract and Resident Engineer's file may serve as the charter for the Construction phase.
- Update records in project management database system(s) (XPM, PMCS, etc.) for Construction phase.

- Update Workplan (resourced schedule) for the Construction phase. Includes the projects scope, cost, and schedule elements.
- Update Quality Management Plan for the Construction phase.
- Update Communication Management Plan for the Construction phase.
- Update Risk Management Plan for the Construction phase.
- Update Resource Management Plan (staff and procurement) for the Construction phase.
- Work agreements for staff resources the Construction phase.
- Scope of work for procurement of A&E contracts/agreements for the Construction phase.

**End Product:**

Updated Project Management Plan for the Construction phase.

**100.20.10 Construction Phase Execution and Control**

The process of coordinating people and other resources to carry out the plan, and ensuring that the Construction phase objectives are being met by monitoring progress and taking corrective action when necessary.

**Guidance**

*A Guide to the Project Management Body of Knowledge (PMBOK); Part I, Chapter 3 & Part II*

*Caltrans Service Contracts Manual; Chapters 1-7, 12, & 17*

*Project Development Procedures Manual (PDPM)*

*Project Development Workflow Tasks Manual (PDWTM)*

*Project Management Control System (PMCS) User Manual*

*Project Management Data Warehouse Handbook*

*Project Management Directives; PMD's 99-01 & 99-03*

*Project Management Handbook*

*Project Management Memo; Dated 10/23/98 by John A. Boda*

*Project Resource Data Management Guide*

*Work Breakdown Structure (WBS); Work the Plan*

*Work Breakdown Structure (WBS); WBS Task Definitions, WBS 100, 265-300*

*XPM Information; XPM Training Manual, XPM Transactions, Abbreviated Task Name, & Cost Center to XPM Resource ID Conversion*

\* Potentially all RBS units could work on this WBS. It is dependent on the specific project.

**RBS**

105-139

140-143

144

345-348

All \*

**Sub-tasks:**

- Status project. Includes the entire status process from reporting work results to updating databases. Includes updating and revising workplan during Construction phase execution.
- Communication and distribution of project records and information. Includes responses to all internal and external requests for information about the project.
- Quality assurance / Quality control
- Procurement of resources through A&E contracts, interagency and cooperative agreements, etc. for the Construction phase. Includes the following:
  - Request for Qualifications (RFQ) or Proposal (RFP).
  - Selection of consultant.
  - Contract negotiation.
  - Contract execution.
  - Contract management.

**End Product:**

Constructed project.



### 100.20.15 Project Close Out

The process of formally bringing the project to an end.

#### Guidance

*A Guide to the Project Management Body of Knowledge (PMBOK); Part I, Chapter 3 & Part II, Chapter 10, Section 10.4 & Chapter 12, Section 12.6*

*Caltrans Service Contracts Manual; Chapters 4, 7, & 17*

*Project Management Control System (PMCS) User Manual*

*Project Management Data Warehouse Handbook*

*Project Management Directives; PMD's 99-01, 99-03, & 99-04*

*Project Management Handbook; Chapter 3, Sections 6-7 & Chapter 4, Section 1*

*Project Management Memo; Dated 10/23/98 by John A. Boda*

*Project Resource Data Management Guide*

#### RBS

105-139

140-143

144

345-348

All \*

\* Potentially all RBS units could work on this WBS. It is dependent on the specific project.

#### Sub-tasks:

- Finalize any contracts or agreements that are completed.
- Sponsor, team, and stakeholder evaluations of project.
- Document lessons learned for project.
- Project close out report.
- Archive project files.
- Close expenditure authorization (EA) for the project.

#### End Product:

Project is complete.



# 150 Project Initiation Document (PID)

Work involved in the preparation, review, and approval of a Project Initiation Document such as a PSR, PSSR, NBSSR, etc.

*Note: Includes minor survey effort directly related to PID*

## 150.05 Define Transportation Problem and Assess Site

This activity includes three major tasks:

- Compiling and reviewing existing background information that may impact the alternatives or the scope of the alternatives under consideration.
- Developing project constraints and information required to determine the extent of the existing problem and future needs. This should include any necessary discussions with internal and external stakeholders.
- Analyzing the existing problem and future requirement to determine the project's need and purpose.

### End Product:

- Purpose and Need Statement.
- Adequate information should exist to begin developing alternatives.

### 150.05.05 Obtain and Review Existing Reports, Studies, and Mapping

This includes Planning documents (such as Transportation Corridor Report, Regional Transportation Improvement Program, Regional Transportation Program, Congestion Management Plan Tribal Transportation Plan ), As-builts, base mapping, existing surveys and R/W maps, TASAS and Pavement Management System (PMS) adjacent projects under development. Initial field reviews are also included.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 1-10, Section 40, Page 17*  
*User's Guide to Photogrammetric Services*

#### RBS

220-279  
 308-310  
 311

### 150.05.10 Perform Geological Hazards Review

Normally this activity is limited to a review of the existing studies and a field review of the area.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 60, Page 13*

#### RBS

316

### 150.05.15 Perform Utility Search

Normally this activity is limited to a review of the existing plans/As-builts and a field review of the area.

#### Guidance

*Surveys Manual*

#### RBS

308-310

### 150.05.20 Identify Environmental Constraints

Normally this activity is limited to a review of the existing studies and a field review of the area.

#### Guidance

*Environmental Handbook (Manual) Vol 1, Chapter 2, Section 2-2.2, Exhibit 1*  
*Project Development Procedures Manual (PDPM), Chapter 3-30, Article 20 & Chapter 1-30, Section 20, Page 3*

#### RBS

168-171  
 176-177  
 200-215  
 332-337

**150.05.25 Prepare Traffic Forecasts/Modeling**

Prepare Traffic Forecasts/Modeling

**Guidance***Project Development Procedures Manual (PDPM), Chapter 1-30, Section 10***RBS**

365-379

**150.05.30 Perform Surveys and Mapping for PID**

*Note: This activity does not include developing detailed design surveys or photogrammetric mapping that will be used throughout the project. That effort should be addressed in activity 185.10.*

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 30, Page 6*  
*Surveys Manual*

**RBS**

220-279

308-310

311

**150.05.35 Define Problem**

Analyzing the available information to determine the project's need and purpose and general scope. In the case of a highway project this would include determining the existing and future Level of Service (LOS) in the no build scenario, a corridor analysis to determine deliverable volumes, determining the general perimeters such as the required number of lanes, and analyzing traffic accident history.

**Guidance***Project Development Procedures Manual (PDPM), Chapter 2-30, Section 40, Page 11***RBS**

220-279

**150.10 Develop Initial Alternatives**

This activity includes identifying all potential alternatives and reaching consensus with internal/external stakeholders on the alternatives that will be addressed in the PID. This activity includes establishing the study limits of the various alternatives to be analyzed in the PID.

**End product:**

General scope and study limits of the alternatives determined to be carried forward for further study. These alternatives are now ready for further analysis to determine project features, cost, and cost effectiveness.

**150.10.05 Obtain Public / Local Agency Input**

Includes but is not limited to:

- Development of Community Action Plan
- Initial information or preliminary Scoping Meetings w/public & local agencies
- Reaching consensus on which alternatives to address in the PID

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 2-20, Article 10, Page 1;*  
*Chapter 2-30, Section 40; & Chapter 3-50*

**RBS**

168-171

220-279

308-310

**150.10.10 Perform Value Analysis**

This activity includes reviewing VA procedures, identifying VA team, conducting the analysis, and recommendations to management and the PDT.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 2-30, Section 40;*  
*Chapter 3-40; & Chapter 3-50*

**RBS**

168-171

220-279

308-310

**150.10.15 Develop Concept Geometrics**

Development of the basic strategy options to meet the project need and purpose. Including developing horizontal & vertical alignment, cross sections, preliminary staging plans, strip maps, right of way requirements, rehabilitation strategies and reviews by FHWA and Caltrans for all alternatives under considerations.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 1-20, Section 70, Article 10;  
Chapter 2-30, Section 40; Chapter 3-50; & Chapter 3-120, Article 50*

**RBS**

220-279  
296-302  
308-310

**150.15 Analyze Alternatives**

This activity is required to develop the necessary scope and cost of each alternatives to be presented in the PID. Costs developed in this activity will be used for programming purposes; consequently, the analysis should be of sufficient detail to identify all potential costs. Also included in this activity are tasks required to assess the adequacy of the alternatives to meet the project's need and purposes.

**End product:**

In conjunction with 150.20 (Perform Preliminary Environmental Evaluation) completion of this activity should establish project scope, cost, and feasibility for presentation in the PID and programming.

**150.15.05 Prepare R/W Data Sheets**

Includes assessing R/W requirements and preparing all right of way cost estimates, obtaining public records, and preparing Cost Estimates Maps

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 40, Page 9  
Right of Way Manual - Forms and Exhibits, Chapter 4  
Right of Way Manual - Reference Version, Chapter 4*

**RBS**

308-310  
400-499

**150.15.10 Assess Utility Relocation Requirements**

Identifying utility needs, inspecting facilities and preparing utility estimate for inclusion in the Right of Way Data Sheets.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 13  
Right of Way Manual - Reference Version, Chapter 13*

**RBS**

220-279  
308-310  
400-499

**150.15.15 Determine Railroad Involvement****Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 8  
Right of Way Manual - Reference Version, Chapter 8*

**RBS**

400-499

**150.15.20 Prepare Preliminary Geotechnical Report****Guidance****RBS**

316

**150.15.25 Prepare Preliminary Materials Report**

Includes initial deflection study, corrosion study, and identification of need for material sites.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 60, Page 13*

**RBS**

317-321

**150.15.30 Prepare Structures Advance Planning Study****Guidance**

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 80, Page 17*  
*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1-3*  
*Bridge Design Memos to Designers, Sections 1, 2, & 17*  
*Bridge Design Specifications, All Sections*  
*OSFP Information & Procedures Guide, Chapter 5*  
*Pumping Plant Design Manual, Appendix 7*

**RBS**

220-279

**150.15.35 Perform Multimodal Review**

This review should address temporary construction and permanent impacts as well as possible improvements to:

- Pedestrian facilities
- Bicycle facilities
- Transit facilities
- Park and Rides
- Equestrian Facilities
- Weight/Inspection Facilities
- Rest Area Facilities

**Guidance****RBS**

220-279

**150.15.40 Perform Hydraulic Review**

Includes review and inspection of existing facilities to determine the need to upgrade or replace the existing drainage system (includes culvert inspection study).

**Guidance****RBS**

312-315

**150.15.45 Perform Traffic Capacity Analysis****Guidance****RBS**

365-379

**150.15.50 Perform Traffic Studies**

This activity includes:

- Prepare preliminary traffic design
- Prepare Traffic Management Plan
- Perform traffic operational and safety analysis
- Traffic system and signal system review
- Perform Skid Tests

**Guidance****RBS**

365-379

**150.15.55 Develop Construction Estimates****Guidance****RBS**

220-279

**150.20 Perform Preliminary Environmental Evaluation**

This activity identifies the potential environmental impacts of each alternative, as well as potential mitigation costs. Costs developed in this activity will be used for programming purposes; consequently, the analysis should be of sufficient detail to identify all potential costs. For those projects where the initiation document is combined with the project

report/environmental document (such as PSSRs and PSR/PR), this activity also includes those tasks required for the environmental document.

**End Product:**

In conjunction with 150.15 (Analyze Alternatives) completion of this activity should establish project scope, cost, and feasibility for presentation in the PID and programming documents.

**150.20.05 Perform Initial Noise Study**

<b>Guidance</b>	<b>RBS</b>
<i>Technical Noise Supplement, all</i>	161-167
<i>Traffic Noise Analysis Protocol, all</i>	332-337

**150.20.10 Perform Hazardous Waste Investigation (Initial Site Assessment (ISA))**

<b>Guidance</b>	<b>RBS</b>
<i>Project Development Procedures Manual (PDPM), Chapter 3-30, Article 20, Page 2</i>	349

**150.20.15 Perform Landscape/Aesthetic Analysis**

<b>Guidance</b>	<b>RBS</b>
	340-344

**150.20.20 Perform Initial NEPA/404 Coordination**

Includes Pre-Consultation with appropriate resource agencies to reach consensus on need and purpose, avoidance alternatives, and feasible alternatives.

<b>Guidance</b>	<b>RBS</b>
<i>Environmental Handbook (Manual) Vol 3, Chapter 1, Section 1-2.3</i>	168-171
	176-177

**150.20.25 Perform Initial Biology Study**

<b>Guidance</b>	<b>RBS</b>
<i>Environmental Handbook (Manual) Vol 3, Chapter 2, Sections 2-1 to 2-3</i>	168-171
	176-177

**150.20.30 Perform Initial Records and Literature Search for Cultural Resources**

<b>Guidance</b>	<b>RBS</b>
<i>Environmental Handbook (Manual) Vol 2, Chapter 7</i>	168-171
	174-175

**150.20.40 Perform Initial Community Impact Analysis, Land Use and Growth Studies**

<b>Guidance</b>	<b>RBS</b>
<i>Environmental Handbook (Manual) Vol 4</i>	168-171
	178-180

**150.20.45 Perform Initial Air Quality Study**

<b>Guidance</b>	<b>RBS</b>
	168-171

**150.20.50 Perform Initial Water Quality Studies****Guidance****RBS**

168-171

**150.20.55 Perform Initial Floodplain Study****Guidance****RBS**

168-171

**150.20.60 Prepare Preliminary Environmental Evaluation**

Includes preparation of a Categorical Exemption/Exclusion for those projects where the PID is combined with project report/environmental document.

**Guidance**

*Environmental Handbook (Manual) Vol 1, Chapter 2, Section 2-2.2, Exhibit 2*

**RBS**

168-171

**150.20.65 Perform Initial Paleontology Study****Guidance****RBS**

168-171

**150.20.70 Perform Initial Native American Coordination****Guidance**

*Environmental Handbook (Manual) Vol 2, Chapters 4&7*

**RBS**

168-171

174-175

**150.25 Prepare and Approve PID (PSR, PSSR, etc.)**

This activity includes all tasks required to develop the PID text and exhibits, as well as the effort required to circulate, review and update the PID (includes appropriate “constructibility review” for project initiation phase). This activity also includes development and approval of any required design exceptions and /or a FHWA access modification request. It also includes the development and approval of any supplemental PIDs.

**End Product:**

This activity is complete with the approval and distribution of the PID.

**150.25.05 Prepare Draft PID****Guidance**

*Project Development Procedures Manual (PDPM), Chapter 2-20, Article 20 and 30;  
Chapter 3-50; & Chapter 3-100  
Highway Design Manual (HDM), Chapter 80, Topic 82  
DD23 Special Funded Projects*

**RBS**

168-171

220-279

**150.25.10 Prepare and Obtain Approval for Exception(s) to Design Standards****Guidance**

*Highway Design Manual (HDM), Chapter 80, Topic 82  
Project Development Procedures Manual (PDPM), Chapter 3-60*

**RBS**

220-279

**150.25.15 Prepare and Approve Access Modification Request****Guidance****RBS**

220-279



**150.25.20 Circulate, Review & Approve PID**

This includes the PSSR Scoping Team field review and appropriate constructibility review.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 1-20, Section 70, Page 30;  
Chapter 2-20, Article 20, Page 6; & Chapter 3-120, Article 10*

**RBS**

100-104  
105-139  
144  
146-151  
155-160  
168-171  
200-215  
220-279  
308-310  
350-354  
400-499  
500-509  
600-799



# 160 Perform Preliminary Engineering Studies and Prepare Draft Project Report

Work involved in conducting preliminary engineering studies used in the development of a draft project report. (Includes minor survey effort directly related to the project report.)

*Note: For projects not requiring a Draft Environmental Document, the final product of this activity is actually the project report.*

## 160.05 Review and Update Project Information

This activity includes review of the information assembled and developed during the PID, as well as a preliminary assessment of what additional information may be required during the project report and environmental document development.

### End Product:

Understanding of project need and purpose, scope, cost and what additional studies may be required during the Project Report development.

### 160.05.05 Review Approved PID

#### Guidance

*Project Development Procedures Manual (PDPM), Chapters: 1-50, 1-60, & 3-50*

#### RBS

220-279

### 160.05.10 Review Geotechnical Information

#### Guidance

#### RBS

220-279

### 160.05.15 Review Materials Information

#### Guidance

#### RBS

220-279

### 160.05.20 Review Traffic Data and Forecasts

#### Guidance

#### RBS

220-279

### 160.05.25 Review Geometrics

#### Guidance

#### RBS

220-279

### 160.05.30 Review Project Scope

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 2-10, Section 50*

#### RBS

220-279

### 160.05.35 Review Project Cost Estimate

#### Guidance

#### RBS

220-279

## 160.10 Perform Engineering Studies

This activity includes developing in more detail or updating those studies initiated during the PID. It also includes those additional engineering studies required to address new alternatives or revisions developed during the environmental process.

### End product:

Refinement of project alternatives, and preliminary design of all project features adequate for discussion of project impacts in the environmental document and suitable for the initiation of final design.

### 160.10.10 Prepare Traffic Forecasts/Modeling

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 1-30, Sections 10 and 60*

#### RBS

365-379

### 160.10.15 Prepare Geometric Plans for Project Alternatives

This includes horizontal and vertical alignments, cross sections, typical sections, construction staging/detours and building plans.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapters: 1-20, Section 70; 2-30, Section 20; & 3-120, Article 50, Page 21*

#### RBS

220-279

### 60.10.20 Perform Value Analysis

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 3-40*

#### RBS

220-279

### 160.10.25 Perform Hydraulics/Hydrology Studies

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 80, Page 17*

#### RBS

312-315

### 160.10.30 Develop Highway Planting Design Concepts

Includes mitigation planting, replacement planting, and new planting.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 3-140, Sections 20 and 50*

#### RBS

340-344

### 160.10.35 Perform Traffic Operational Analysis

Includes any additional capacity analysis as well as an operational review of the proposed alternatives.

#### Guidance

#### RBS

365-379

### 160.10.40 Review and Update Right of Way Data Sheet

Includes assessing R/W requirements and preparing or updating right of way cost estimates.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 40*  
*Right of Way Manual - Forms and Exhibits, Chapter 4*  
*Right of Way Manual - Reference Version, Chapter 4*

#### RBS

308-310

400-499

**160.10.45 Re-assess Utility Impacts**

Identifying utility needs, inspecting facilities and preparing utility estimate for inclusion in the Right of Way Data Sheets.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapters: 1-30, Section 130; 3-20, Article 20, Page 2*

*Right of Way Manual - Forms and Exhibits, Chapter 13*

*Right of Way Manual - Reference Version, Chapter 13*

**RBS**

220-279

308-310

400-499

**160.10.50 Perform Railroad Study****Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 8*

*Right of Way Manual - Reference Version, Chapter 8*

**RBS**

400-499

**160.10.55 Perform Multi-modal Study**

This review should address temporary construction and permanent impacts as well as possible improvements to:

- Pedestrian facilities
- Bicycle facilities
- Transit facilities
- Equestrian Facility
- Weight/Inspection Facilities
- Rest Area Facilities

**Guidance****RBS**

220-279

**160.10.60 Perform Park & Ride Study****Guidance**

*Project Development Procedures Manual (PDPM), Appendix A-100, Article 20, Page 2*

**RBS**

220-279

365-379

**160.10.65 Perform Relinquishment and Vacation Study****Guidance****RBS**

308-310

**160.10.70 Perform Traffic Studies**

This Includes:

- Prepare preliminary traffic design
- Prepare Traffic Management Plan
- Perform Safety Analysis
- Traffic system and signal system review

**Guidance****RBS**

365-379

**160.10.75 Prepare/Update Materials Information for Project Report**

Includes identification of Material sites and any required lab testing.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 1-30, Sections 10 and 60*

**RBS**

317-321

**160.10.80 Prepare/Update Geotechnical Information****Guidance****RBS**

316

**160.10.85 Prepare Structures Advanced Planning Studies for New Alternatives****Guidance**

*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1-3*  
*Bridge Design Memo to Designers, Sections 1, 2, & 17*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2, 5, & 6*

**RBS**

220-279

**160.10.90 Prepare HOV Report****Guidance**

*Project Development Procedures Manual (PDPM), Chapter 2-30, Section 40, Page 11*

**RBS**

365-379

**160.15 Prepare Draft Project Report**

This activity includes all tasks required to develop the text, exhibits and cost estimate required for a Draft Project Report. This activity includes development and approval of any design exceptions that were not addressed during the PID. If only a Categorical Exemption/Exclusion is required, the draft Project Report is in itself the Final Project Report, and WBS 180 should not be used.

**End product:**

This activity is complete with the approval and distribution of the Draft Project Report, any Supplemental Draft Project Reports, or in the case where no draft environmental document is required, the final Project Report.

**160.15.05 Prepare Cost Estimates for Alternatives****Guidance****RBS**

220-279

308-310

**160.15.10 Prepare Fact Sheet for Exceptions to Design Standards****Guidance**

*Highway Design Manual (HDM), Chapter 80, Topic 82*  
*Project Development Procedures Manual (PDPM), Chapter 3-60*

**RBS**

220-279

**160.15.15 Obtain Approval for Exceptions to Encroachment Policy****Guidance**

*Project Development Procedures Manual (PDPM), Chapter 3-20, Article 20*

**RBS**

220-279

**160.15.20 Prepare Draft Project Report****Guidance**

*Project Development Procedures Manual (PDPM), Chapter 2-30, Section 50, Page 18*

**RBS**

220-279

## 160.15.25 Circulate, Review, & Approve Draft Project Report

### Guidance

*Project Development Procedures Manual (PDPM), Chapters: 2-30, Section 50, Page 18; & 3-50, Article 20, Page 2*

### RBS

100-104  
105-139  
144  
146-151  
155-160  
168-171  
200-215  
220-279  
308-310  
350-354  
400-499  
500-509  
600-799

## 160.20 Project Control Surveys, Mapping and Initial Land Net Mapping for Project Report

This product includes surveys and mapping work for Project Report. It includes necessary control surveys, preliminary design data surveys and photogrammetric surveys commensurate with this phase of the project as well as preliminary property boundary assessments, determination of status of existing right of way and its grid positioning, and associated land net mapping. This product is prerequisite to work products in WBS 185 and 220.

### End product:

- Required surveys and mapping for Project Report
- Coordinated locations of existing alignments and R/W boundaries and land net monuments

### 160.20.05 Perform Corridor (Basic) Control Surveys for Project Report

Includes preparing survey request, planning, research, field survey, processing and adjusting data, and preparing survey corridor control map.

#### Guidance

*User's Guide to Photogrammetric Services  
Surveys Manual*

#### RBS

308-310

### 160.20.10 Perform Project Control Surveys for Project Report

Activities additional to the Corridor Control Survey to provide full Project Control Surveys, includes preparing survey request, planning, research, field survey, processing and adjusting data, and preparing survey project control map.

#### Guidance

*Surveys Manual*

#### RBS

308-310

### 160.20.15 Perform Supplemental Control Surveys for Project Report

Activities necessary to expand, detail, or otherwise supplement the Project Control Survey, includes preparing survey request, planning, research, field survey, processing and adjusting data, and preparing survey supplemental control map.

#### Guidance

*Surveys Manual*

#### RBS

308-310

**160.20.20 Prepare Base Photogrammetric Maps and Products for Project Report**

Includes preparing mapping request, flight line and control distribution planning, pre-marking control survey, aero-triangulation, contract administration, 3-D compilation, map assembly, data conversion, quality control and digital terrain modeling.

**Guidance**

*User's Guide to Photogrammetric Services*  
*Surveys Manual*

**RBS**

308-310

**160.20.25 Perform Preliminary Record Data Search for Project Report**

Includes research and review of assessors' records, available mapping and vesting documents leading to initial monument search list.

**Guidance**

*Surveys Manual*

**RBS**

308-310

**160.20.30 Perform Initial Land Net Recovery and Field Ties for Project Report**

Includes field and related survey effort necessary to search, recover, describe, and tie-in land net monuments, calculate coordinates for same and prepare Corner Records as required.

**Guidance**

*Surveys Manual*

**RBS**

308-310

**160.20.35 Perform Preliminary Boundary Determination for Project Report**

Evaluation of existing R/W data, grid positioning and mapping of existing R/W and initial positioning of affected property boundaries. Does not include effort accomplished in WBS 160.20.25, 160.20.30.

**Guidance**

*Surveys Manual*

**RBS**

308-310



# 165 Perform Environmental Studies and Prepare Draft Environmental Document (DED)

Work involved in the performance of environmental studies needed to determine the environmental impact of a Capital Outlay Project and preparation of the draft environmental document. DOES NOT include activities beyond study completion needed to obtain resource agency (Corps of Engineers, Fish and Wildlife, etc.) permits. These efforts should be performed under activity 205. The end-product of this activity is approval to circulate the CEQA/NEPA DED or approved CE.

## 165.05 Perform Environmental Scoping and Select Alternatives for Study

Environmental Scoping and Preparatory Tasks which initiate the environmental evaluation process.

### End Product:

Alternatives selected for environmental study.

### 165.05.05 Review Project Information

Obtain and examine information from prior stages in the project development process related to the environmental evaluation.

#### Guidance

*Environmental Handbook (Manual) Vol. 1, Chapter 2*  
*Project Development Procedures Manual (PDPM), Chapters: 1-60; 3-50, Article 20, Page 2*

#### RBS

168-171  
 308-310

### Sub-tasks:

- Obtain and examine PID and related documents.
- Obtain and examine project plans from earlier stages.
- Discuss and verify initial Purpose and Need, Alternatives, and previous environmental evaluations with Project Manager.
- Obtain and examine RTP and RTIP listings, regional emissions analyses.
- Verify compliance with NEPA/404 MOU process at prior stages.
- Verify Clean Air Act conformity status of project and alternatives.
- Start Project File.

### End product:

- Initial Environmental Project File Setup

### 165.05.10 Perform Public and Agency Scoping Process

Prepare and publish legal notices, and perform all public and agency participation tasks related to the overall environmental product prior to circulation of the Draft Environmental Document to the public.

#### Guidance

*Environmental Handbook (Manual) Vol. 1, Chapter 2*  
*Project Development Procedures Manual (PDPM), Chapter 3-70*

#### RBS

168-171

### Sub-tasks:

- Prepare written notification of initiation of environmental studies.
- Prepare Draft Notice of Intent (NOI) (NEPA requirement -- EIS only) and submit to FHWA for Federal Register publication.
- Prepare and circulate Notice of Preparation (NOP) (CEQA requirement -- EIR only).
- Conduct and document Public and Agency environmental scoping meeting(s)

- Prepare and coordinate with MPO/RTPA, and Tribal Transportation Planning Agency a Public Participation Plan, meeting MPO, SIP, FHWA Metropolitan Planning and tribal requirements.
- Conduct and document public and agency open house and workshop meetings during development of the environmental document.
- Conduct and document other formal and informal public participation activities such as citizen's committees, focus groups, presentations to political bodies, and media appearances, not directly related to preparation and coordination of a technical work product.
- Prepare & circulate newsletters and other public informational and press materials
- Prepare and maintain Project Mailing List

#### End Product:

This WBS task does not have a single deliverable indicating completion of the work package. Work on this WBS activity may occur throughout the performance period of 165-level work.

- Draft Notice of Intent for FHWA publication
- Published Notice of Preparation with mailing list and State Clearinghouse documentation.
- Public Participation Plan
- MPO/APCD comments on and concurrence with Public Participation Plan.
- Minutes, Records of Meeting, Newsletters, press materials, and Public Participation Reports for meetings and other public participation activities.
- Project Mailing List

### 165.05.15 Select Alternatives for Further Study

The Project Manager, Caltrans Management, and the Project Development Team select alternative(s) for further study in the Draft Environmental Document and Draft Project Report. The selection process and criteria are documented for use in later stages of the project. Alternatives are based on those developed and documented in the Project Initiation Document, with additions or deletions as required.

*Note: If the project is not exempt from conformity requirements or is otherwise considered "regionally significant", and a Major Investment Study (MIS - Federal ISTE A requirement) has not yet been done, this activity would include the required MIS effort.*

#### Guidance

*Environmental Handbook (Manual) Vol. 1, Chapter 2*

*Project Development Procedures Manual (PDPM), Chapter 2-30, Sections 30 & 40*

#### RBS

100-104

105-139

168-171

200-215

220-279

#### Sub-tasks:

- Perform preliminary alternatives analysis
- Consider public comment and participation (via the scoping process in task 165.05.10)
- Review alternatives analysis with Project Development Team
- Prepare and review alternative selection documentation
- Prepare and obtain MPO and transit agency approval of Major Investment Study (MIS) if required and if not previously performed by MPO or Caltrans.
- Preliminary alternatives analysis report (used by PDT and public)
- Public and PDT Review documentation and comments
- Response to comments

#### End Product:

- Alternative(s) selection memo
- NOP/NOI Alternatives discussion (EIR/EIS projects only)

- Major Investment Study (MIS) if necessary

### 165.05.20 Prepare Maps for Environmental Evaluation

Prepare environmental study maps for the alternatives selected for further studies. This activity includes preparation of only those maps not produced as part of other activities (such as 160.10.15-Prepare Geometric Plans for Project Alternatives) that are necessary for publishing in study reports and the Environmental Document.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 2-30, Section 30, Page 7*

**RBS**

#### Sub-tasks:

Mapping and plans include the following:

- Project Vicinity Map.
- Project Location Map.
- Proposed Project/Alternatives Plans.
- Project R/W and adjacent parcel mapping.
- Hydrologic and flood plain mapping.
- Seismic and environmental geology mapping

#### End product:

Adequate project maps for initiation of environmental studies for the selected alternatives. However, this activity may continue through the environmental process to address modifications and maps required for the related study reports and Environmental Document

## 165.10 Perform General Environmental Studies

Perform environmental technical studies, other than for Biology and Cultural Resources and prepare technical reports and other work products documenting study results.

#### End Product:

All technical study reports necessary for the preparation of the environmental document for a project, other than those related to Biology (See WBS activity 165.15) and Cultural Resources (see WBS activity 165.20).

### 165.10.05 Perform Surveys & Mapping for Environmental Studies

Perform field surveys to augment existing base mapping and to determine the location of environmental resources.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 2-30, Section 30, Page 7*

*Surveys Manual*

*User's Guide to Photogrammetric Services*

**RBS**

308-310

#### Sub-tasks:

- Prepare for and perform field surveys required for environmental studies. Detailed project surveys and mapping is included in WBS 185.10.
- Provide photographs to be used in the environmental study process

#### End Product

Site maps for environmental studies

### 165.10.10 Obtain Rights of Entry for Environmental Studies

Obtain access to private land as needed for environmental technical studies

#### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 8*

*Right of Way Manual - Reference Version, Chapter 8*

**RBS**

308-310

400-499

#### Sub-tasks:

- Identify properties where access is needed, and for what types of studies.
- Where formal rights of entry are needed, contact property owners and obtain it.

- Provide identification documents for field personnel to use when requesting informal entry permission.

#### End Product

- Formal Rights of Entry
- Informal entry documents - Includes verbal agreements. etc.
- Personnel identification documents

### 165.10.15 Perform Community Impact Analysis, Land Use, and Growth Studies

Perform all activities related to socioeconomic, land use, and growth inducement technical studies for use in the environmental document, and prepare a technical report documenting study results.

*Note: Tasks that are common with draft relocation impact study are done under this activity.*

#### Guidance

*Environmental Handbook (Manual) Vol. 4*

*Project Development Procedures Manual (PDPM), Chapter 2-30, Section 30, Page 7*

*Traffic Volume Data*

#### RBS

161-167

168-180

178-180

185-194

216-219

#### Sub-tasks:

- Perform ethnicity and economic studies to determine the characteristics of the communities affected by the project. This includes Environmental Justice Requirements.
- Perform land use studies to determine the relationship of the project to local, regional, and other planning, and identify compatibility issues with existing land uses.
- Perform growth inducement studies.
- Prepare interim reports for internal and peer review.
- Prepare technical report with mapping & other graphics.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.
- Coordinate with local and regional agencies, ethnic and community groups, and business organizations.
- Farmland Evaluation and Coordination

#### End Product:

- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo with proposed mitigation measures and mitigation effectiveness evaluation

### 165.10.20 Perform Visual Impact Analysis

Perform all activities related to Visual Impact Analysis for use in the environmental document, and prepare a technical report documenting study results.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapters: 2-30, Section 30; 3-140, Section 20, Articles 20 & 40, & Section 50, Page 23*

*Technical Noise Supplement, N-6200*

*Traffic Noise Analysis Protocol, 5, 7*

#### RBS

220-279

308-310

329

#### Sub-tasks:

- Perform a visual inventory of the project area.
- Prepare visual simulations of the proposed alternatives.
- Coordinate with local agencies, citizens groups, and business groups related to community design and scenic issues.

- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.
- Perform Scenic Resource Determination

**End product:**

- Visual Simulations and Exhibits
- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo with proposed mitigation measures and mitigation effectiveness evaluation

**165.10.25 Perform Noise Study**

Perform all activities related to noise impact analysis for use in the environmental document, and prepare a technical report documenting study results.

**Guidance**

*Highway Design Manual (HDM), Chapter 1100*  
*Project Development Procedures Manual (PDPM), Chapter 3-150*  
*Technical Noise Supplement*  
*Traffic Noise Analysis Protocol*

**RBS**

332-337

**Sub-tasks:**

- Identify sensitive receptors and analysis locations.
- Collect existing noise information, including monitoring data from ARB and APCD sites.
- Perform noise modeling.
- Develop estimates of effectiveness for alternative mitigation measures.
- Prepare technical report with preliminary barrier plans.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

**End product:**

- Preliminary Noise Barrier Plans
- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo

**165.10.30 Perform Air Quality Study**

Perform all activities related to air quality impact analysis for use in the environmental document, and prepare a technical report documenting study results.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 2-30, Section 30, Page 7*

**RBS****Sub-tasks:**

- Identify sensitive receptors and analysis locations.
- Collect existing CO data
- Perform CO and/or other monitoring. NOTE: Scheduling of this activity should account for appropriate study windows.
- Perform micro-scale modeling to predict future pollutant concentrations with no project and all applicable alternatives.
- Verify Federal Clean Air Act conformity status of the project; coordinate with regional and air quality agencies to obtain concurrence in the conformity status of the project, and carry out additional conformity-related activities, if necessary, including regional modeling of additional alternatives and recommendations for RTP and/or RTIP revisions.

- Develop estimates of effectiveness for alternative mitigation measures.
- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

**End product:**

- Monitoring Report
- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo
- Evidence of coordination with and concurrence by MPO and air quality agencies

**165.10.35 Perform Water Quality Studies**

Perform all activities related to water quality impact analysis for use in the environmental document, and prepare a technical report documenting study results.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 2-30, Section 30, Page 7*

**RBS****Sub-tasks:**

- Identify receiving waters, their regulatory status, and their uses.
- Collect existing water quality information, including monitoring data from other agencies as available.
- If necessary due to inadequate existing information, conduct on-site sampling and/or monitoring.
- Perform modeling if necessary and appropriate to predict future pollutant concentrations with no project and all applicable alternatives.
- Verify applicability of Sole Source Aquifer, NPDES, and other laws and regulations to the project and design of drainage facilities.
- Develop estimates of effectiveness for alternative drainage facilities and mitigation measures.
- Prepare technical report with mapping & other graphics.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

**End Product:**

- Monitoring Report(s)
- Permit application materials if required
- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo
- Evidence of coordination with and concurrence by MPO and water quality agencies

**165.10.40 Perform Energy Studies**

Perform all activities related to energy impact analysis for use in the environmental document, and prepare a technical report documenting study results.

**Guidance****RBS****Sub-tasks:**

- Perform modeling or use other analysis methods to predict future energy use with no project and all applicable alternatives.
- Verify applicability of energy-related laws and regulations to the project and design of drainage facilities.
- Prepare technical report.

- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

**End Product:**

- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo

**165.10.45 Prepare Summary of Geotechnical Report**

Prepare summary of Preliminary Geotechnical Report for inclusion in the Draft Environmental Document.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 60, Page 13*

**RBS****Sub-tasks:**

- Review Preliminary Geotechnical Report
- Prepare abstract for inclusion in Environmental Document text.

**End Product:**

Technical report Abstract for use in Environmental Document text

**165.10.50 Perform Preliminary Site Investigation for Hazardous Waste**

Perform all activities related to one or more Preliminary Site Investigations as defined under Caltrans procedures, and prepare a technical report documenting study results.

*Note 1: If the Initial Site Assessment was not prepared during the PID, ISA work completed during the environmental process should be captured under 150.20.10.*

*Note 2: Typically this work may be done through the consultant contract process. Consultant selection and administration activities should be captured under the 100.20.*

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 3-30*

**RBS****Sub-tasks:**

- Review and, if necessary, update Initial Site Assessment.
- Transfer funding from project to hazardous waste contract to cover task order cost.
- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

**End product:**

- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo

**165.10.55 Prepare Draft Right of Way Relocation Impact Document**

Perform all activities related to relocation impact analysis for use in the environmental document, and prepare a technical report documenting study results.

*Note: Tasks that are common with Draft Relocation Impact study and 165.10.15 (Perform Socioeconomic, Land Use, and Growth Studies) are done under 165.10.15.*

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 10*  
*Right of Way Manual - Reference Version, Chapter 10*

**RBS**

308-310  
 400-499

**Sub-tasks:**

- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

**End Product:**

- Technical Report and associated materials
- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo

**165.10.60 Prepare Location Hydraulic/Floodplain Study Report**

Perform all activities related to preparing a Location Hydraulic Study, including structures hydraulics, for use in the environmental document and Draft Project Report, and a flood plain study for use in the environmental document, and prepare a technical report or reports documenting study results.

*Note: These studies are usually combined into one document, since they address largely the same issues. The Location Hydraulic Study is a specific FHWA requirement where a project will encroach on a flood plain. The Flood plain Study may consider a broader range of issues than FHWA requires for the Location Hydraulic Study, and is usually part of the information required to deal with the Corps of Engineers in the 404 permit process.*

**Guidance**

Highway Design Manual (HDM), Chapter 800, Topic 804  
 Project Development Procedures Manual (PDPM), Chapters: 1-30, Section 90, Page 21;  
 2-30, Section 30, Page 7

**RBS**

220-279  
 312-315

**Sub-tasks:**

- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

**End Product:**

- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo

**165.10.65 Perform Paleontology Study**

Tasks involved with the identification of paleontological resources within the project's study area. This activity would be applicable only in region where there is a known high potential for surface or shallow deposits on strata containing important paleontological specimens.

**Guidance****RBS****Sub-tasks:**

- Identification of geologic strata potentially affected by project related activities (including borrow sites, cuts and haul roads) and assessment of its potential to contain significant paleontological resources.
- Literature search of paleontological resources in the region.
- Consultation with paleontologists with expertise in the region
- Develop preliminary mitigation plan, if necessary

**End Product:**

- Summary report of conclusions for inclusion in the Environmental Document.
- Preliminary paleontological work plan



## 165.15 Perform Biological Studies

Perform all activities related to preparing Biological Studies related to the project.

### End Product:

The biological study reports necessary for the preparation of the environmental document for a project.

### 165.15.05 Perform Biological Assessment

Perform all tasks related to endangered species and other studies required to complete a Biological Assessment report.

#### Guidance

*Environmental Handbook (Manual) Vol. 3, Chapter 4*

*Project Development Procedures Manual (PDPM), Chapter 2-30, Section 30, Page 7*

#### RBS

176-177

### Sub-tasks:

- Obtain endangered species list for project area.
- Perform presence/absence and other field studies.
- Determine effect on species.
- Perform formal and informal coordination with resource agencies.
- Prepare technical report.
- Prepare abstract(s) for inclusion in Natural Environment Study and Environmental Document text.

### End Product:

- Biological Assessment Report
- Documentation of coordination
- Memo discussing recommended and/or required mitigation measures

### 165.15.10 Perform Wetlands Study

Perform all tasks related to identifying, studying project effects on, and determining mitigation for wetlands in the project area, and prepare a report.

#### Guidance

*Environmental Handbook (Manual) Vol. 3, Chapter 3*

*Project Development Procedures Manual (PDPM), Chapters: 1-10, Section 40, Article 30; 2-30, Section 30, Page 7*

#### RBS

176-177

### Sub-tasks:

- Coordinate endangered species information with Biological Assessment (165.15.05) work.
- Delineate wetlands in the project area to Corps of Engineers standards, and obtain Corps approval of delineation.
- Determine effect on species and amount/type of wetlands affected.
- Prepare technical report.
- Prepare abstract(s) for inclusion in Natural Environment Study and Environmental Document text.

### End Product:

- Technical report
- Wetland Delineation materials
- Memo discussing recommended and/or required mitigation measures

### 165.15.15 Perform Resource Agency Permit Related Coordination

Effort involved directly with formal consultation and coordination required to complete biological studies. This work may result from studies done under any of the other biological task areas, and may be required in order to complete those studies. The purpose of separating this effort is to identify the workload involved with permit and mandatory consultation work in the biology field.

The intent of this activity is to gain consensus with the resource agencies on the impacts and mitigation's on the proposed alternatives necessary for completion of the DED. Subsequent effort in resolving comments from the DED is covered in activity 175. Effort required to obtain permits after project approval is included in activity 205. This includes coordination with the Corp. of Engineers under the NEPA/404 Coordination MOU process.

**Guidance**

*Environmental Handbook (Manual) Vol. 3, Chapters: 1, Section 1-2.3; 2, Section 2-3.3; 3, Section 3-4 & 3-5; 4, Section 4-2 & 4-3*

*Project Development Procedures Manual (PDPM), Chapters: 1-10, Section 40, Article 30; 2-30, Section 30, Page 7*

**RBS**

176-177

**Sub-tasks:**

- Obtain concurrence by the Corp. of Engineers with initial purpose and need and range of alternatives, per NEPA/404 MOU requirements.
- Coordinate work with Biological Assessment (165.15.05), Wetlands Study (165.15.10), and Natural Environment Study (165.15.20) work.
- Perform Section 7 and/or Section 10 Consultation with U.S. Fish & Wildlife Service.
- Perform formal consultation and obtain concurrence in biological and wetland studies under the NEPA/404 Coordination MOU process.
- Perform early consultation with Calif. Dept. of Fish and Game regarding biology issues related to possible Section 1601/1603 permits.
- Perform formal and informal biology-related coordination with other resource agencies as needed.

**End Product:**

Documentation of various types of consultation and coordination for inclusion in other biological study reports and the environmental document.

**165.15.20 Prepare Natural Environment Study Report**

Based on information developed in the Biological Assessment and Wetlands Study reports, and other information as directed by technical guidance, prepare a Natural Environment Study report. This report is the master document covering compliance with biological study and consultation requirements, and providing language and mitigation measures for use in the environmental document.

**Guidance**

*Environmental Handbook (Manual) Vol. 3, Chapter 2*

*Project Development Procedures Manual (PDPM), Chapter 2-30, Sections 30 & 40*

**RBS**

176-177

**Sub-tasks:**

- Review other biological study work.
- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

**End Product:**

- Technical Report
- Abstract for use in Environmental Document
- Memorandum summarizing Technical Report, discussing impacts and their potential significance, and recommending or requiring mitigation measures

**165.20 Perform Cultural Resource Studies      165.20**

Perform studies and prepare reports related to cultural resources (archaeological, and historical studies) to meet the requirements of CEQA, NEPA, Section 106 of the National Historic Preservation Act, and Section 5024 of the Public Resources Code. Includes consultation with Native American communities.

**End product:**

Documentation (e.g., from FHWA or SHPO) that compliance with applicable federal and/or state cultural resource laws and regulations has been achieved.

**165.20.05 Perform Archaeological Survey****End product:**

Archaeological Survey Report (ASR) that details study methods and results.

**165.20.05.05 Prepare Area of Potential Effect (APE)/Study Area Map****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 7*

**RBS**

174-175

**165.20.05.10 Conduct Native American Consultation****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 7*

**RBS**

174-175

**165.20.05.15 Perform Records and Literature Search****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 7*

**RBS**

174-175

**165.20.05.20 Conduct Field Survey****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 7*

**RBS**

174-175

**165.20.05.25 Prepare Archaeological Survey Report (ASR)****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 7*

**RBS**

174-175

**165.20.10 Perform Extended Phase I Archaeological Studies****End Product:**

A technical report detailing the methods and results of the Extended Phase I studies.

**165.20.10.05 Conduct Native American Consultation****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 7*

**RBS**

174-175

**165.20.10.10 Prepare Proposal****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 7*

**RBS**

174-175

**165.20.10.15 Conduct Filed Investigation****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 7*

**RBS**

174-175

**165.20.10.20 Analyze Materials****Guidance***Environmental Handbook (Manual) Vol. 2, Chapter 7***RBS**

174-175

**165.20.10.25 Prepare Report****Guidance***Environmental Handbook (Manual) Vol. 2, Chapter 7***RBS**

174-175

**165.20.15 Perform Phase II Archaeological Studies****End Product:**

A technical report detailing the methods and results of the Phase II studies.

**165.20.15.05 Conduct Native American Consultation****Guidance***Environmental Handbook (Manual) Vol. 2, Chapter 7***RBS**

174-175

**165.20.15.10 Prepare Proposal****Guidance***Environmental Handbook (Manual) Vol. 2, Chapter 7***RBS**

174-175

**165.20.15.15 Conduct Field Investigation****Guidance***Environmental Handbook (Manual) Vol. 2, Chapter 7***RBS**

174-175

**165.20.15.20 Analyze Materials****Guidance***Environmental Handbook (Manual) Vol. 2, Chapter 7***RBS**

174-175

**165.20.15.25 Prepare Report****Guidance***Environmental Handbook (Manual) Vol. 2, Chapter 7***RBS**

174-175

**165.20.20 Perform Historical and Architectural Resource Studies****End Product:**

A technical report detailing the methods and results of the Historic and Architectural Resource studies.

**165.20.20.05 Prepare Preliminary Area of Potential Effects (Federal)/Study Area Maps (State only) for Architecture****Guidance***Environmental Handbook (Manual) Vol. 2, Chapter 5 & 6***RBS**

172-173

**165.20.20.10 Prepare Historic Architectural Survey Report (HASR)****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 5 & 6*  
*Project Development Procedures Manual (PDPM), Chapter 2-30, Section 30, Page 7*

**RBS**

172-173

**165.20.20.15 Prepare Historic Resources Evaluation Report (HRER)****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 5 & 6*  
*Project Development Procedures Manual (PDPM), Chapter 2-30, Section 30, Page 7*

**RBS**

172-173

**165.20.20.20 Prepare Bridge Evaluation****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 5 & 6*

**RBS**

172-173

**165.20.25 Prepare and Process Cultural Resource Compliance Documents****End Product:**

Compliance documents submitted to FHWA and/or the State Historic Preservation Officer (SHPO) for concurrence in resource significance, project effects, and mitigation measures.

**165.20.25.05 Prepare Final Area of Potential Effects (Federal/Study Area Maps (State only)****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 2*

**RBS**

168-171

172-173

174-175

**165.20.25.10 Perform PRC 5024.5 Consultation****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 2*

**RBS**

168-171

172-173

174-175

**165.20.25.15 Prepare Historic Property Survey Report (HPSR) /Determination of Eligibility (for Federal projects), Historic Property Compliance Report (HPCR) (for State only projects)****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 2*

**RBS**

168-171

172-173

174-175

**165.20.25.20 Prepare Finding of Effect****Guidance**

*Environmental Handbook (Manual) Vol. 2, Chapter 2*

**RBS**

168-171

172-173

174-175

**165.20.25.25 Prepare Archaeological Data Recovery Plan/Treatment Plan****Guidance***Environmental Handbook (Manual) Vol. 2, Chapter 2***RBS**

168-171

172-173

174-175

**165.20.25.30 Prepare Memorandum of Agreement****Guidance***Environmental Handbook (Manual) Vol. 2, Chapter 2***RBS**

168-171

172-173

174-175

**165.25 Prepare and Approve Draft Environmental Document 165.25**

Prepare Draft Environmental Document (DED) with all attachments or Categorical Exemptions/Exclusion Documentation. Conduct all necessary in-house and external reviews (NEPA and CEQA documents) and obtain US DOT (Federal Highways (FHWA), FTA, or other Administration) approval to circulate NEPA Document.

**End Product:**

Completed CE documentation or approval to circulate DED.

**165.25.05 Prepare Draft Environmental Document**

Analyze technical studies and prepare DED (CEQA draft ND/IS or EIR; NEPA draft EA or EIS; typically combination CEQA/NEPA document). Activity includes the coordination of the studies required for the ED.

**Guidance***Environmental Handbook (Manual) Vol. 1, Chapters 2 & 3**Project Development Procedures Manual (PDPM), Chapter 2-30, Section 40***RBS**

105-139

168-171

168-171

185-194

216-219

220-279

332-337

**165.25.10 Prepare Section 4(f) Evaluation****Guidance***Environmental Handbook (Manual) Vol. 1, Chapters 2 & 3**Project Development Procedures Manual (PDPM), Chapter 2-30, Section 30, Page 7***RBS**

168-171

168-180

**165.25.15 Prepare Categorical Exemption / Categorical Exclusion (CE) Determination**

Includes review, circulation and approval.

**Guidance***Environmental Handbook (Manual) Vol. 1, Chapters 2 & 3***RBS**

168-171

168-180

**165.25.20 Conduct Environmental PEER & Other Reviews**

Carry out formal and informal review of DED within Caltrans. Revise DED as required to address comments. Perform preliminary US DOT review if applicable.

**Guidance***Environmental Handbook (Manual) Vol. 1, Chapter 4, Section 4-2.1***RBS**

168-171

168-180

400-499

**165.25.25 Obtain Approval to Circulate**

Includes time and effort required to resolve US DOT comments.

**Guidance**

*Environmental Handbook (Manual) Vol. 1, Chapter 4, Section 4-2*

*Project Development Procedures Manual (PDPM), Chapter 2-30, Section 50, Article 10*

**RBS**

168-171





# 175 Circulate Draft Environmental Document and Select Preferred Project Alternative

Work involved in the circulation of the Draft Environmental Document, obtaining and responding to public comment, and selecting a preferred alternative.

## 175.05 Circulate DED

Preparation for and circulation of the DED. This activity does not include the public hearing process and responding to comments.

### End Product:

End of Circulation period. This activity does not include the public hearing process and responding to comments.

### 175.05.05 Prepare Master Distribution and Invitation Lists

This activity includes updating the existing project's mailing list and preparing the distribution list for all interested individuals, groups, or governmental agencies.

#### Guidance

*Environmental Handbook (Manual) Vol. 1; Chapter 4, Section 4-2.3*

*Project Development Procedures Manual (PDPM), Chapter 2-40, Article 20, Page 5*

#### RBS

168-171

### 175.05.10 Prepare Notices Regarding Public Hearing & Availability of DED

This activity includes notice of availability of the DED, mailed notifications of the public hearing, either the published "Notice of Opportunity" or the first published public hearing notice.

#### Guidance

*Environmental Handbook (Manual) Vol. 1; Chapter 4, Section 4-2.3*

*Project Development Procedures Manual (PDPM), Chapter 2-40, Article 20, Page 5*

#### RBS

168-171

### 175.05.15 Publish and Circulate DED

Includes formal public circulation period, reproduction and mailing of the DED. This activity does not include the public hearing process and responding to comments. Includes transmittal of DED to CTC and preparation of CTC agenda item.

#### Guidance

*Environmental Handbook (Manual) Vol. 1; Chapter 4, Section 4-2*

#### RBS

168-171

### 175.05.20 Obtain Federal Consistency Determination (Coastal Zone)

#### Guidance

#### RBS

## 175.10 Prepare for and Hold Public Hearing

Perform all tasks for the purpose of preparing and holding Public Hearing for a project.

### End Product:

Distribution of the record of Public Hearing

### 175.10.05 Determine Need for Public Hearing Process

Based upon the response to the "Notice of Opportunity" for a public hearing, meetings are scheduled with the interested parties to determine if a public hearing is required..

#### Guidance

*Environmental Handbook (Manual) Vol. 1; Chapter 4, Section 4-2.6*

*Project Development Procedures Manual (PDPM), Chapter 2-40*

#### RBS

168-171

220-279

**175.10.10 Arrange for Public Hearing Logistic**

Arrange for Public Hearing Logistic - Includes all formal arrangements for the public hearing including:

- Select and obtain public hearing officer
- Obtain hearing room
- Obtain security
- Obtain court reporter
- Obtain language interpreters

**Guidance**

*Environmental Handbook (Manual) Vol. 1; Chapter 4, Section 4-2.6*

*Project Development Procedures Manual (PDPM), Chapter 2-40, Articles 60 & 70-110*

**RBS**

168-171

220-279

**175.10.15 Prepare Displays for Public Hearing**

Preparation of any displays, exhibits, equipment, signs, models, or other physical features to used at the public hearing.

**Guidance**

*Environmental Handbook (Manual) Vol. 1; Chapter 4, Section 4-2.6*

*Project Development Procedures Manual (PDPM), Chapter 2-40, Articles 70-110*

**RBS**

168-171

220-279

**175.10.20 Prepare and Publish Notices of Public Hearing and Availability of DED**

This includes the second published and all subsequent public hearing notice and general publicity regarding the public hearing. Including

- Display ads
- Flyers or newsletters mailed / distributed to residents and interested parties
- Notices on bulletin boards in public places
- Press release to all media
- Distribution of notices through schools and service clubs
- Copies of the notice sent to OPPD & FHWA
- Availability of DED

**Guidance**

*Environmental Handbook (Manual) Vol. 1; Chapter 4, Section 4-2.6*

*Project Development Procedures Manual (PDPM), Chapter 2-40, Article 20, Page 5*

**RBS**

168-171

220-279

**175.10.25 Review Map Displays and Discuss Public Hearing****Guidance**

*Environmental Handbook (Manual) Vol. 1; Chapter 4, Section 4-2.*

*Project Development Procedures Manual (PDPM), Chapter 2-40, Article 40, Page 106*

**RBS**

168-171

220-279

**175.10.30 Display Public Hearing Maps**

Includes either formal or informal display of the maps to be shown at the public hearing, prior to the public hearing.

**Guidance**

*Environmental Handbook (Manual) Vol. 1; Chapter 4, Section 4-2.6*

*Project Development Procedures Manual (PDPM), Chapter 2-40, Article 30, Page 9*

**RBS**

168-171

220-279

**175.10.35 Hold Public Hearing**

Includes all remaining activities for the preparation of the public hearing.

**Guidance**

*Environmental Handbook (Manual) Vol. 1; Chapter 4, Section 4-2.6*

*Project Development Procedures Manual (PDPM), Chapter 2-40, Articles 70 & 80*

**RBS**

168-171

220-279

400-499

## 175.10.40 Prepare and Distribute Record of Public Hearing

### Guidance

*Environmental Handbook (Manual) Vol. 1; Chapter 4, Section 4-2.6*  
*Project Development Procedures Manual (PDPM), Chapter 2-40, Article 120, Page 27*

### RBS

168-171  
 220-279

## 175.15 Respond to Public Comments and Correspondence

Includes the formal response to comments on the DED for the preparation of the Final Environmental Document (FED).

### Guidance

*Environmental Handbook (Manual) Vol. 1; Chapter 4, Section 4-2.7*  
*Traffic Noise Analysis Protocol; 4, 2*  
*Project Development Procedures Manual (PDPM), Chapter 2-40, Article 80, Page 16*

### RBS

168-171  
 168-180  
 220-279

### Sub-Tasks:

None identified.

### End Product:

Printed copies of the response to comments or the complete text, figures, tables, etc. ready for inclusion into the FED.

## 175.20 Select Preferred Alternative

Select the project's preferred alternative to be carried forward in the Project Report (PR) and Final Environmental Document (FED).

### Guidance

*Project Development Procedures Manual (PDPM); Chapter 12, Section 2*  
*Project Development Procedures Manual (PDPM), Chapter 2-50, Section 20, Page 3*

### RBS

168-171  
 220-279

### Sub-Tasks:

- Assemble all the data needed to make the selection of the preferred alternative.
- PDT and other meetings to select the preferred alternative.

### End Product:

Minutes of the PDT meeting documenting the selection, and agreements with other agencies.



# 180 Prepare and Approve Project Report and Final Environmental Document

Work involved in the preparation, review, and approval of a Project Report, a Final Environmental Document, and Notices of Determination and / or Records of Decision.

## 180.05 Prepare and Approve Project Report

Includes all work beyond the approval of the Draft Project Report (160.15) leading to and including approval and distribution of the Project Report.

*Note: If only a Categorical Exemption/Exclusion is required, the draft Project Report is in itself the Final Project Report, and WBS 180 should not be used.*

### End Product:

Approved copies are made and distributed.

### 180.05.05 Update Draft Project Report

Includes the Preferred Alternative selection and updating the cost estimate.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 2-50, Section 30, Page 6*

#### RBS

220-279

400-499

### 180.05.10 Review and Approve Project Report

Includes any revisions needed from comments made during circulation.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 2-50, Section 30, Page 6*

#### RBS

100-104

105-139

144

146-151

155-160

168-171

200-215

220-279

308-310

350-354

400-499

500-509

600-799

## 180.10 Prepare and Approve Final Environmental Document (FED)

The DED is updated to identify the rationale of the preferred alternative selection. Includes work on the Final Environmental Document, Section 4(f) Evaluation, Findings, and Statement of Overriding Considerations and approvals of both FHWA and Caltrans.

### End Product

Signatures on all of the applicable documents.

**180.10.05 Prepare and Approve FED****Guidance**

*Environmental Handbook (Manual) Vol. 1, Chapter 4, Sections 4-2.8 & 4-2.9*  
*Environmental Handbook (Manual) Vol. 3, Chapter 4, Section 4-4*  
*Project Development Procedures Manual (PDPM), Chapters: 2-30, Section 30, Page 7; 2-50, Section 30, Page 6 & Section 50, Page 14*

**RBS**

067-069  
 168-171  
 168-180  
 176-177  
 308-310  
 400-499

**Sub-Tasks:**

- Circulation for review
- Any revisions due to review comments.
- Review period for the Section 4(f) evaluation
- Findings
- Statement of Overriding Considerations
- Response to comments on the FED
- Prepare CEQA Certification
- Request and obtain approval from FHWA and Caltrans
- Conduct Section 106 Consultation, prepare Memorandum of Agreement and Obtain Concurrence of MOA Parties
- Conduct Section 7 Consultation
- Finalize Section 4(f) Statement
- Prepare Floodplain Only Practicable Alternative Finding
- Prepare Wetlands Only Practicable Alternative Finding
- Conduct Coordination for Section 404 Permit
- Finalize Mitigation Measures

**180.10.10 Public Distribution of FED**

Includes reproduction, preparation of a transmittal letter, publication of the Notice of Availability, transmittal of copies of the Federal Register, and distribution of the Final Environmental Document. Includes transmittal of FED to CTC and preparation of CTC agenda item.

**Guidance**

*Environmental Handbook (Manual) Vol. 1, Chapter 4, Section 4-2.10*

**RBS**

168-171

**180.10.15 Prepare Final Right of Way Relocation Impact Document**

Complete and update the draft Right of Way Impact Study done during the DED phase.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 10*  
*Right of Way Manual - Reference Version, Chapter 10*

**RBS**

308-310  
 400-499

**180.15 Close Out Environmental Process**

Work involved in preparing the Record of Decision (ROD) and obtaining FHWA approval.

**End Product:**

- Notification to the units that the RODS has been signed.
- Notification to the District of the completion of the NOD.

**180.15.05 Prepare and Approve Record of Decision (NEPA)****Guidance**

*Environmental Handbook (Manual) Vol. 1, Chapter 4, Section 4-2.11*  
*Project Development Procedures Manual (PDPM), Chapter 2-50, Section 50, Page 14*  
*Traffic Noise Analysis Protocol, 1*

**RBS**

168-171  
 168-180

**180.15.10 Prepare and File Notice of Determination (CEQA)**

Includes preparation of NOD, copies made and sent to HQ, CTC action and filing, and filling with the Office of Planning and Research.

*Note: Includes Notice of Determination (NOD) for projects with or without a route adoption or new road connection and projects which are locally funded.*

**Guidance**

*Environmental Handbook (Manual) Vol. 1, Chapter 4, Section 4-2.11*

*Project Development Procedures Manual (PDPM), Chapter 2-50, Section 30, Article 30 & Section 50, Page 14*

*Traffic Noise Analysis Protocol, 1,3*

**RBS**

168-171

168-180





# 185 Prepare Base Maps and Plan Sheets

Work involved in the preparation of geometric base maps and functional base plan sheets, including review of existing project information, gathering appropriate mapping, conducting additional studies. Final products of this activity include Maps-to-R/W and plan sheets to other functional units.

## 185.05 Review and Update Project Information

Initial activities of project design phase necessary to become familiar with the project purpose and scope. Activities necessary to update project information needed to prepare engineering design reports, perform preliminary design, determine Right of Way requirements, and perform 30% constructability review.

### End Product:

- Updated Project Information
- Confirmation Of Project Purpose And Scope

### 185.05.05 Review Project Concept

#### Guidance

*Project Development Procedures Manual (PDPM), Chapters: 1-60; 2-60, Article 50, Page 9; 3-40; & 3-50*

#### RBS

220-279  
308-310  
400-499  
510-515  
516-584

### Sub-Tasks:

- Review of existing project information to determine the project purpose and scope.
- Review Project Reports
- Review Post Miles And Description Of Project
- Review Planning Alignments
- Review Freeway Agreement
- Review Traffic Capacity Requirements
- Review Project Site
- Review/Update Project Cost Estimate
- Confirm Project Purpose And Scope
- 30% Constructability Review

### 185.05.10 Update Project Information

Updating of project information necessary to determine the project scope and cost (BEES, etc...). This does not include work needed to prepare a Supplemental Project Report. Work needed for a Supplemental Project Report should be included under WBS Activities 160, 165, 175, and 180 and the project rescheduled accordingly.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapters: 1-30, Sections 20-40 & 80; 2-30, Section 30, Page 7; & 2-70, Section 10, Article 20*

#### RBS

220-279  
308-310

## 185.10 Perform Design Surveys and Photogrammetric Mapping

Produce the mapping and survey control necessary for PS&E. This supplements the mapping and control surveys that was produced for the Project Report stage. (see WBS 160.20).

### End product:

- Project Mapping for PS&E
- Project Survey Control for PS&E

**185.10.05 Perform Control Surveys for Design**

Expand, detail, or otherwise supplement the Project Report control survey produced in 160.20.05. Includes preparing survey request, planning, research, processing and adjusting data, and preparing survey supplemental control map (Includes Photogrammetric Control).

**Guidance**

*Surveys Manual*

**RBS**

308-310

**185.10.10 Prepare Photogrammetric Maps and Products for Design**

Includes preparing mapping request, flight line and control distribution planning, pre-marking control survey, aero-triangulation, contract administration, 3-D compilation, map assembly, data conversion, quality control and digital terrain modeling.

**Guidance**

*Drafting and Plans Manual of Instruction*

*Surveys Manual*

*User's Guide to Photogrammetric Services*

**RBS**

308-310

311

**185.10.15 Perform Design Data Surveys**

Includes preparing survey request, planning, research, field survey, structure site surveys, processing and adjusting data, necessary to provide project topographic data.

**Guidance**

*Surveys Manual*

**RBS**

308-310

311

**185.10.20 Perform Pavement Elevation Surveys**

Includes supplemental survey control necessary to obtain pavement elevations, field survey for pavement elevations, processing and adjusting the data.

**Guidance**

*Surveys Manual*

**RBS****185.15 Perform Preliminary Design**

This activity includes establishment and any subsequent substantial changes to the project footprint. Design activities with regard to the following preliminary design work:

- Horizontal And Vertical Alignment
- Typical Cross Sections
- Super Elevations
- Earthwork
- Intersection/Interchange Design
- Review Of Geometric Design
- Exceptions To Design Standards
- Includes Delineation Support

**End product:**

- Completion of base maps (which become skeleton plan sheets) for functional units, suitable for developing the functional PS&E.
- Approved geometric design.

**185.15.05 Perform Roadway and Misc. Design**

Includes: Design of horizontal and vertical alignment, typical cross sections, super elevations, earthwork (cut & fill locations).

**Guidance**

*Highway Design Manual (HDM), Chapter 80, Topic 82*

*Project Development Procedures Manual (PDPM), Chapters: 2-70, Section 10, Articles 20 & 50; & 3-60*

**RBS**

220-279

296-302

**185.15.10 Review Proposed Geometrics**

Includes: Routine meetings with OPPD, FHWA, and other units in review of proposed geometric design

**Guidance**

*Design Information Bulletins (DIB), Number 66*  
*Highway Design Manual (HDM), Chapters 80, Topic 82 & 100, Topic 111*  
*Project Development Procedures Manual (PDPM), Chapters: 1-20, Section 70; 1-30, Sections 90 & 110; 2-70, Section 10, Article 20; 3-60; & 3-140*

**RBS**

220-279  
308-310

**185.15.15 Prepare Requests for Exceptions to Design Standards**

All work necessary in the preparation of Fact Sheets for exceptions to the Caltrans mandatory and advisory design standards and processing of approval.

**Guidance**

*Highway Design Manual (HDM), Chapter 80, Topic 82*

**RBS**

220-279

**185.15.20 Perform Value Analysis****Guidance****RBS**

220-279

**185.20 Prepare Engineering Reports**

Activities by various functional units to develop project design reports needed to establish design parameters and complete preliminary design (see sub-tasks).

**End product:**

Various Engineering Reports

**185.20.05 Update Traffic Data, Analysis, and Forecasts****Guidance**

*Highway Design Manual (HDM), Chapters: 100, Topics 102 & 103; & 600, Topic 603*  
*Project Development Procedures Manual (PDPM), Chapter 1-30, Sections 10 & 70*

**RBS**

296-302  
365-379

**185.20.10 Prepare Hydrology and Hydraulic Reports****Guidance**

*Highway Design Manual (HDM), Chapter 800*  
*Project Development Procedures Manual (PDPM), Chapters: 1-30, Section 90; & 2-70, Section 10, Article 10*

**RBS**

296-302  
312-315

**185.20.15 Prepare Geotechnical Design Report****Guidance****RBS**

316

**185.20.20 Prepare Pavement Design Report**

Requires all tests, such as deflection study, required to complete structural section design recommendations.

**Guidance****RBS**

317-321

**185.20.25 Prepare Materials Report****Guidance**

Highway Design Manual (HDM), Chapter 100, Topics 112 & 113  
 Plans, Specifications, and Estimates Guide, Section 4-3.02B  
 Project Development Procedures Manual (PDPM), Chapter 1-30, Section 60

**RBS**

317-321

**185.20.30 Prepare Soundwall Design Report****Guidance**

Technical Noise Supplement, 6,7

**RBS**

220-279

296-302

332-337

**185.25 Determine Right of Way Requirements**

Activities necessary to determine right of way needs and prepare maps for submittal to Right of Way. Includes identifying the need for new right of way, permanent easements, temporary construction easements, and railroad involvement. Includes coordination with affected agencies to determine right of way impacts.

*Note: This includes incorporation of utility R/W needs determined in activity 200.15.*

**End product:**

Maps To Right Of Way

**185.25.05 Review Project With Affected Agencies**

Includes meetings and coordination work with affected agencies to determine right of way impacts. Does not include obtaining of required permits or cooperative agreements (see WBS 205).

**Guidance**

Construction Manual, Section 6-16-2  
 Plans, Specifications, and Estimates Guide, Section 3-4  
 Right of Way Manual - Reference Version

**RBS**

220-279

308-310

400-499

**185.25.10 Determine Fee and Easement Requirements****Guidance**

Construction Manual, Section 6-16-2  
 Plans, Specifications, and Estimates Guide, Section 3-4  
 Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 20  
 Right of Way Manual - Reference Version

**RBS**

220-279

308-310

400-499

**185.25.15 Prepare Right of Way Requirements Maps**

These are project base maps prepared by design with right of way needs identified for submittal to Right of Way Engineering. Does not include work by Right of Way Engineering to prepare right of way appraisal maps (see WBS 220.15.05). This will include incorporation of utility R/W needs determined in activity 200.15.

**Guidance**

Caltrans Standard Plans  
 Highway Design Manual (HDM), Chapters 200, Topic 205 & 700, Topic 701  
 Project Development Procedures Manual (PDPM), Chapters: 1-30, Section 40; 2-70, Section 10, Article 40 & Section 20, Article 20; & 3-20  
 Right of Way Manual - Reference Version

**RBS**

220-279

296-302

308-310

**185.25.20 Determine Final Railroad Involvement**

Includes preliminary investigations and meetings to determine railroad involvement and right of way impacts. Does not include obtaining of railroad agreements (see WBS 205.15).

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 1-30, Sections 40 & 80*  
*Right of Way Manual - Reference Version*

**RBS**

220-279  
 296-302  
 400-499

**185.25.25 Determine Water Well Abandonment Needs****Guidance**

*Highway Design Manual (HDM), Chapter 100, Topic 110, Index 110.2(3)*  
*Project Development Procedures Manual (PDPM), Chapter 1-30, Sections 40*

**RBS**

220-279



# 190 Prepare Structures Site Plans

Work involved in the preparation of various structure site plans, including site geometrics, contours, utility locations and other surface and underground obstacles. The end product of this activity is the transmittal of structure site plans to the appropriate design unit.

## 190.10 Prepare Site Plans for Retaining Walls and Non-standard Earth Retention Systems

This activity includes all the tasks involved in assembling necessary data, such as foundation studies, etc., for retaining walls and nonstandard earth retention systems. This activity also includes completing the Bridge Site Submittal Form for Retaining Walls and Non Standard Earth Retention Systems and preparing necessary site plan sheets. In addition to the requested information, any special circumstance or important information should be noted and included.

### Guidance

*Drafting and Plans Manual of Instruction, Article 3-3.2*  
*Highway Design Manual (HDM), Chapter 200, Topic 210*  
*OSFP Information & Procedures Guide, Chapters 2, 5 & 6*

### RBS

220-279  
 296-302

### Sub-tasks:

- Collect and calculate required information
- Prepare site plan drawings
- Prepare Bridge Site Submittal Form for Retaining Walls
- Complete, when necessary, the “special circumstance/important information” section of the bridge site submittal form.

### End product:

Submittal of the site plans to Division of Structures.

## 190.15 Prepare Site Plans for Soundwalls on Retaining Systems or Structures

This activity includes filling out the Retaining Wall Site Data Submittal form and attach all required background information with the form. This activity also includes preparing the necessary site plan sheets to be included in the package. In addition to the requested information, any special circumstance or important information should be noted and included.

*Note: Sound wall specifics are developed under activity 185.20.30, “Prepare Soundwall Design Report”.*

### Guidance

*Drafting and Plans Manual of Instruction, Article 3-3.2*  
*Highway Design Manual (HDM), Chapter 1100*  
*Project Development Procedures Manual (PDPM), Chapters 2-70, Section 10, Article 30 & 3-150*  
*Traffic Noise Analysis Protocol*  
*OSFP Information & Procedures Guide, Chapters 2, 5 & 6*

### RBS

220-279  
 296-302

### Sub-tasks:

- Collect and calculate required information
- Prepare site plan drawings
- Prepare Request form
- Complete, when necessary, the “special circumstance/important information” section of the bridge site submittal form.

### End product:

Submittal of the site plans to Division of Structures.

## 190.20 Prepare Site Plans for Pumping Plants

This activity includes assembling the necessary information as outlined in Section 3-3.2 Bridge Site Maps of the Drafting and Plans Manual. Additional information are needed for pumping plants as follow:

- proposed location of the pump house and storage box
- location of the pump outfall line
- location and elevation of the lowest edge of pavement

In addition to the requested information, any special circumstance or important information should be noted and included.

### Guidance

*Drafting and Plans Manual of Instruction, Article 3-3.2*

*Highway Design Manual (HDM), Chapter 800, Topics 805 & 839*

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 10, Article 30*

*OSFP Information & Procedures Guide, Chapters 2, 5 & 6*

*Pumping Plant Design Manual, Required Design Data*

### RBS

220-279

296-302

### Sub Tasks:

- Collect and calculate required information
- Prepare site plan drawings
- Prepare Request form
- Complete, when necessary, the “special circumstance/important information” section of the bridge site submittal form.

### End product:

Submittal of the site plans to Division of Structures and will be forwarded to Electrical and Mechanical Branch for final design of pumping plant.

## 190.25 Prepare Site Plans for Special-Design Culverts

This activity includes completion of the Bridge Site Data Submittal Form and attaching all required background information with the form. This activity also includes preparing all necessary site plan sheets to be included in the package. In addition to the requested information, any special circumstance or important information should be noted and be included.

### Guidance

*Drafting and Plans Manual of Instruction, Article 3-3.2*

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 10, Article 30*

*OSFP Information & Procedures Guide, Chapters 2, 5 & 6*

### RBS

220-279

296-302

### Sub-tasks:

- Collect and calculate required information
- Prepare site plan drawings
- Prepare Bridge Site Data Submittal form
- Complete, when necessary, the “special circumstance/important information” section of the bridge site submittal form.

### End Product:

Submittal of the site plans to the Division of Structures

## 190.30 Prepare Site Plans for Bridges and Structures

This activity includes completion of the Bridge Site Data Submittal form and attaching all required background information with the form. In addition to the requested information, any special circumstance or important information should be noted and be included.

### Guidance

*Drafting and Plans Manual of Instruction, Article 3-3.2*

*Highway Design Manual (HDM), Chapter 200, Topic 208 & Chapter 1000*

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 10, Article 30*

*OSFP Information & Procedures Guide, Chapters 2, 5 & 6*

### RBS

220-279

296-302



**Sub-tasks:**

- Collect and calculate required information
- Prepare site plan drawings
- Prepare Bridge Site Data Submittal form
- Complete, when necessary, the “special circumstance/important information” section of the bridge site submittal form.

**End Product:**

Submittal of the site plans to the Division of Structures.



# 195 Right of Way Property Management and Excess Land

Work involved in managing all property held for transportation projects, and all excess properties.

## 195.40 Property Management

Property Management units manage all property held for future transportation projects, and all excess properties. Work includes maintaining an inventory of state-owned properties, inspecting properties for loss prevention, marketing rentable properties, establishing tenancies, collecting rents, inputting information in the Property Management Property System (RWPS), maintaining and rehabilitating properties, terminating tenancies, monitoring and coordinating properties for hazardous waste cleanup, and final preparation of the properties to clearance and demolition or excess land sales.

### End Product:

Transference of property to clearance status.

### 195.40.05 Fair Market Rent Determinations (Residential)

All work involved in preparation of fair market rent determinations of residential parcels.

#### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 11*  
*Right of Way Manual - Reference Version, Chapter 11*

#### RBS

400-499

### 195.40.10 Fair Market Rent Determinations (Non-Residential)

All work involved in preparation of fair market rent determinations of nonresidential parcels.

#### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 11*  
*Right of Way Manual - Reference Version, Chapter 11*

#### RBS

400-499

### 195.40.15 Regular Property Management

All work involved in directly managing and reviewing rentable and non-rentable properties, including maintaining the RWPS.

#### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 11*  
*Right of Way Manual - Reference Version, Chapter 11*

#### RBS

400-499

### 195.40.20 Property Maintenance and Rehabilitation (Rentable Property)

All work involved in preparing and administering property maintenance contracts, preparing and assigning repair orders, inspecting work, record keeping and other administrative activities associated with property maintenance and rehabilitation.

#### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 11*  
*Right of Way Manual - Reference Version, Chapter 11*

#### RBS

067-069  
 400-499

**195.40.25 Property Maintenance and Rehabilitation (Non-Rentable Property)**

All work involved in preparing and administering property maintenance contracts of unrentable non-operating right of way. This is usually right of way that has been acquired for construction projects that have not yet been awarded or pieces of excess land. Major work items consist of mowing, debris removal, weed abatement, boarding up permanently vacated structures, correcting hazardous conditions, etc.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 11*

*Right of Way Manual - Reference Version, Chapter 11*

**RBS**

400-499

**195.40.30 Hazardous Waste and Hazardous Materials**

Monitoring state-owned properties for potential hazardous waste and hazardous materials. Coordinating with the District Hazardous Material Coordinator and tenants for cleanup.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 11*

*Right of Way Manual - Reference Version, Chapter 11*

**RBS**

400-499

**195.40.35 Transfer of Property to Clearance Status**

Preparing the property to be transferred to clearance status, including vacating tenants, terminating utility services (disconnects/removals) and boarding up improvements.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 11*

*Right of Way Manual - Reference Version, Chapter 11*

**RBS**

400-499

**195.45 Excess Land**

Includes all work required for administering project specific inventory and disposition of State-owned real property that is no longer required for rights of way or other operational purposes. Includes all efforts for appraisal of excess land, and environmental clearances.

**End Product:**

Sale or Disposal of excess land.

**195.45.05 Excess Lands Inventory**

All efforts required to maintain the excess land inventory. This includes all activities related to disposal units in hold categories or in foreclosure. Activities include processing releases of parcels into inventory through design changes; route recessions or parcel splits; all clearances required to make the property available for sale including environmental clearances; obtaining approval from the Property Retention Committee to place disposal units in a hold category; and all time spent updating the ELMS and completing forms.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 16*

*Right of Way Manual - Reference Version, Chapter 16*

**RBS**

400-499

**195.45.10 Excess Land Appraisal and Public Sale Estimate**

All work involved in appraising or estimating real property for excess land disposal.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 16*

*Right of Way Manual - Reference Version, Chapter 16*

**RBS**

400-499

**195.45.15 Administering Government Code Section 54235**

Related to GC Sections 54235, et seq. (Roberti Bill SB86). This includes monitoring activities, but does not include sales activities. Sales efforts should be charged to either 195.45.20, 195.45.25, or 195.45.30, depending on the value of the disposal unit.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 16*

*Right of Way Manual - Reference Version, Chapter 16*

**RBS**

400-499

**195.45.20 Property Disposal of Units up to \$15,000 in Value**

All activities to sell or otherwise dispose of a disposal unit up to \$15,000 for which all clearances have been obtained and which is now available to sell. Activities include ordering and reviewing deeds, maps and appraisals; negotiating with property owners; advertising property and conducting public sales; disposing through transfer of control and possession, exchange, utility agreement or cooperative agreement; incorporating excess into right of way or operating property; processing CTC agenda or delegated sales and recording deeds; making presentations to the CTC on excess land issues; and processing credit sales and all collections efforts, including foreclosure and disposition of property subsequently returned.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 16*

*Right of Way Manual - Reference Version, Chapter 16*

**RBS**

067-069

400-499

**195.45.25 Property Disposal of Units between \$15,001 and \$500,000 in Value**

All activities to sell or otherwise dispose of a disposal unit from \$15,001 to \$500,000 for which all clearances have been obtained and which is now available to sell. Activities included are shown in WBS 195.45.20.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 16*

*Right of Way Manual - Reference Version, Chapter 16*

**RBS**

067-069

400-499

**195.45.30 Property Disposal of Units over \$500,000 in Value**

All activities to sell or otherwise dispose of a disposal unit over \$500,000 for which all clearances have been obtained and which is now available to sell. Activities included are shown in WBS 195.45.20.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 16*

*Right of Way Manual - Reference Version, Chapter 16*

**RBS**

067-069

400-499

**195.45.35 CTC and AAC Coordination**

Activities necessary to make presentations to the California Transportation Commission (CTC) and the Airspace Advisory Committee (AAC) on excess land issues. This includes preparation time and any additional work done at the specific request of the CTC or AAC. This does not include time spent preparing appraisals, resume packages or other transmittals that regularly go to the CTC for approval.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 16*

*Right of Way Manual - Reference Version, Chapter 16*

**RBS**

067-069

400-499



# 200 Coordinate Utilities

Work involved in the identification, positive location (potholing), protection, removal and/or relocation of utility facilities necessary to clear and certify Right of Way. Includes coordination with utility companies, review of utility plans, establishing liability, FHWA Authorization and processing payments per Utility Agreements. State's development of plans on behalf of a Utility Owner as part of a relocation agreement will be performed as part of activity 230, "Prepare Draft PS&E".

*Note: State's effort in support of administering the physical relocation (construction) of impacted utilities will be included as part of WBS activities 270 or 200.25. This effort will be planned/scheduled within activity 270, ONLY if the relocation is made part of the project's construction contract (item work or CCO work).*

## 200.05 Perform Preliminary Utility Verification

Typically called the "verification stage". Work involves review of previous effort developed during the PID and environmental process, as well as any additional effort (typically limited to field review, As-Built search and preliminary meetings with the utility companies) required to determine preliminary utility locations.

### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 13*

*Right of Way Manual - Reference Version, Chapter 13*

### RBS

220-279

308-310

400-499

### Sub-tasks:

- Developing preliminary existing utility plans, preliminary meetings, permit review, and sending the plans to the pertinent utility companies for verification.
- Inspect Utility Facilities. Includes Field Review
- Review Project Data (Project Reports, etc.). Includes Initial Utility File Setup

### End Product:

- Preliminary utility location verification.
- Utility clearance letter required for right of way certification if no utilities within the project limits.

## 200.10 Determine Utility Locations (Potholing) and Prepare Conflict Maps

Typically called the "potholing stage". Efforts involved in preparing, exchanging and verifying conflict plans, determining utility conflict resolution strategies, and obtaining and administering contracts and utility agreements for utility potholing.

### End Product:

- Utility conflict maps.
- Determine relocation strategies.
- Approved Potholing Notices.
- Utility clearance letter required for right of way certification if no conflicts determined by the project engineer.

### 200.10.05 Prepare Notices and Obtain Agreements for Potholing

Includes all efforts leading to determination of liability, preparing and processing (fund verification) Utility Agreements, Notice to Owner and Report of Investigation (ROI) with the utility companies and contractors for potholing and utility surveys.

### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 13*

*Right of Way Manual - Reference Version, Chapter 13*

### RBS

308-310

400-499

**200.10.10 Perform Potholing**

Includes administration of the pot holing contract.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 13*  
*Right of Way Manual - Reference Version, Chapter 13*

**RBS**

220-279  
 308-310  
 400-499  
 600-799

**200.10.15 Perform Utility Surveys****Guidance**

*Surveys Manual*

**RBS**

220-279  
 308-310

**200.10.20 Review for Conflicts after Utility Surveys****Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 13*  
*Right of Way Manual - Reference Version, Chapter 13*

**RBS**

220-279  
 400-499

**200.10.25 Prepare Utility Conflict Maps**

Includes internal review and redesign to avoid relocation. Includes transmittal of plans to the utility companies.

**Guidance****RBS**

220-279  
 296-302  
 308-310

**200.10.30 Pothole Revised Notice, Amended UA & Process Billing per UA**

Includes preparation and processing of invoices and billings, etc.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 13*  
*Right of Way Manual - Reference Version, Chapter 13*

**RBS**

400-499

**200.15 Utility Conflict Resolution**

Efforts involved in review of conceptual utility relocation plans from utility company. This includes determining and obtaining utility encroachment exceptions, determination of utility R/W needs for WBS 185.25.15 activities, obtaining exceptions to high-low risk policy, and includes transmittal of needs to project development and right of way.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 3-20*

**RBS**

220-279  
 308-310

**End Product:**

Utility R/W requirements & determination of the utility conflict resolution strategies.

**200.20 Implement Utility Relocation Plan**

Typically is called the “relocation stage”. Effort involved in preparing and approving Liability/FHWA Authorization Package and notifying utility owners of relocation requirements.

**End Product:**

- Approved Relocation Notices
- Utility clearance letter required for right of way certification.



**200.20.05 Prepare, Approve and Transmit Liability/FHWA Authorization Package**

Includes all efforts in obtaining Relocation Plans from Utility Companies determining liability, preparing Utility Agreements, and obtaining funds, Notice to Owner, and Report of Investigation (ROI), and processing owners claims. Also includes transmitting Notice/Agreement/Permit to utility owner.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapters 3-20 & 3-50, Section 30, Article 40*  
*Right of Way Manual - Forms and Exhibits, Chapter 13*  
*Right of Way Manual - Reference Version, Chapter 13*

**RBS**

220-279  
 400-499

**200.20.25 Relocation Revised Notice, Amended UA & Process Billings per UA**

Includes preparation and processing of invoices and billings, etc.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 13*  
*Right of Way Manual - Reference Version, Chapter 13*

**RBS**

400-499

**200.20.30 Prepare Utility JUA/CCUA/Conveyance Document Packages**

Includes R/W Utility Coordinator effort in preparing and assembling agreements and Director's Deed packages.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 13*  
*Right of Way Manual - Reference Version, Chapter 13*

**RBS**

400-499

**200.25 Manage the Utility Relocation**

This activity involves all work related to administering the physical utility relocation work prior to, during, or after the construction of the project pursuant to a Notice to Owner to relocate and includes determining the construction schedule for utility relocation.

**Guidance****RBS****Sub-tasks:**

Administer/inspect relocation work. Includes pre-construction meetings, coordination with utility owner, monitoring, and discovered work.

**End product:**

Utility relocation completed.



# 205 Obtain Permits, Agreements, and Route Adoptions

Work involved in obtaining necessary permits, agreements, or route adoptions needed for project construction.

*Note: Agreements or permits specific to other level 5 activities are NOT included as part of this work.*

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## 205.05 Determine Required Permits

This activity includes all work, normally prior to approval of the PR and FED, to determine what permits may or may not be required.

*Note: This does not include coordination with resource agencies covering the scoping and NEPA/404 MOU process covered under activities 150.10.05, 150.20.20, 165.05.10, and 165.15.15.*

### Guidance

Project Development Procedures Manual (PDPM), Chapter 2-60, Article 20

### RBS

168-171  
220-279

### End Product:

A list of what specific permits are required and from what agency and/or a memo to file of what permits were considered but not pursued and for what reason.

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## 205.10 Obtain Permits

All work involved in obtaining permits, including:

- Discussions and negotiations with the permitting agency.
- Preparation of the permit and attachments such as exhibits, maps, etc.
- Obtain funds for any required permit fee.
- Submit permit application.

### End product:

The permits from each applicable permitting agency have been received.

### 205.10.05 Obtain U.S. Corps of Engineers Permit (404)

#### Guidance

Environmental Handbook (Manual) Vol. 3, Chapter 3, Section 3-4.1

#### RBS

168-171  
176-177  
220-279

### 205.10.10 Obtain U.S. Forest Service Permit

#### Guidance

#### RBS

168-171  
220-279

### 205.10.15 Obtain U.S. Coast Guard Permit

#### Guidance

#### RBS

168-171  
220-279

**205.10.20 Obtain Department of Fish & Game Permit (1601/1603)****Guidance***Environmental Handbook (Manual) Vol. 3, Chapter 2, Section 2-4.2***RBS**

168-171

176-177

220-279

**205.10.25 Obtain Coastal Development Permit****Guidance****RBS**

168-171

220-279

**205.10.30 Obtain Local Agency Concurrence/Permit**

Coordination necessary to obtain concurrence from the appropriate local agencies when state highway construction impacts existing local facilities.

**Guidance****RBS**

168-171

220-279

**205.10.40 Obtain Waste Discharge Permit (NPDES)****Guidance****RBS**

168-171

220-279

**205.10.45 Obtain U.S. Fish and Wildlife Service Approval****Guidance***Environmental Handbook (Manual) Vol. 3, Chapter 4, Section 4-4***RBS**

168-171

176-177

220-279

**205.10.50 Obtain Regional Water Quality Control Board Permit (401)****Guidance****RBS**

168-171

220-279

**205.10.95 Obtain “Other” Permits**

Includes all permits not listed above, such as Bay Conservation and Development Commission (BCDC) permit, Tahoe Regional Planning Agency (TRPA) permit, and flood control district permits.

**Guidance****RBS**

168-171

220-279

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**205.15 Obtain Railroad Agreements**

All work involved in preparing a Railroad Service Contract, a Railroad Construction and Maintenance Agreement, and PUC application.

**End Product:**

Transmittal of a Clearance Memo from the Structures Agreements Section to Office Engineer. Project cannot be advertised prior to this clearance.

**205.15.05 Obtain Plan Approval****Guidance**

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 80*

**RBS**

308-310

**205.15.10 Prepare Special Provisions and Insurance Clauses****Guidance****RBS****205.15.15 Prepare Service Contract for Railroad Services****Guidance****RBS****205.15.20 Negotiate and Obtain Construction and Maintenance Agreement****Guidance**

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 80*  
*Right of Way Manual - Reference Version*

**RBS****205.15.25 Prepare PUC Exhibits and Application****Guidance**

*Drafting and Plans Manual of Instruction, Article 3-2.7*  
*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 80*  
*Right of Way Manual - Reference Version*

**RBS**

308-310

**205.20 Obtain Freeway Agreements**

Obtain a Freeway Agreement, superseding Freeway Agreement, Controlled Access Highway Agreement, and/or “Performance” (“Project”) Agreement. Includes preparation, Caltrans and local agency reviews, and revision to the text and map. This task also includes any work done on an agreement for a new public road connection and any work done on a Resolution of Change.

**End Product:**

Executed copies of the Freeway Agreement and map sent to the local agency and filed in the district files.

**205.20.05 Prepare Draft Freeway Agreement****Guidance**

*Drafting and Plans Manual of Instruction, Article 3-2.5*  
*Project Development Procedures Manual (PDPM), Chapter 2-60, Article 50*

**RBS**

168-171  
 220-279  
 296-302

**205.20.10 Review Draft Freeway Agreement****Guidance**

*Project Development Procedures Manual (PDPM), Chapter 3-90*

**RBS**

168-171  
 220-279  
 296-302

**205.20.15 Prepare Final Freeway Agreement****Guidance***Project Development Procedures Manual (PDPM), Chapter 2-60, Article 50***RBS**

168-171

220-279

**205.20.20 Execute Freeway Agreement****Guidance***Project Development Procedures Manual (PDPM), Chapter 2-60, Article 50***RBS**

168-171

220-279

**205.25 Prepare Agreement for Material Sites**

Prepare and execute agreements for non-commercial borrow and disposal material sites. This includes identifying, obtaining necessary environmental clearance (if any), and preparing a reclamation plan.

**Guidance***Highway Design Manual (HDM), Chapter 100, Topic 111**Right of Way Manual - Reference Version***RBS**

220-279

317-321

**Sub-tasks:**

- Negotiate material or disposal royalties
- Prepare and review Materials Agreement
- Execute Materials Agreement
- Environmental clearance
- Prepare reclamation plan.

**End product:**

Copies of the Materials Agreement have been distributed to the appropriate units.

**205.30 Prepare and Execute Maintenance Agreement**

Prepare and execute Maintenance Agreement with local agency.

**Guidance***Project Development Procedures Manual (PDPM), Chapter 1-30, Section 110**Project Development Procedures Manual (PDPM), Chapter 2-80, Section 30***RBS**

105-139

220-279

308-310

600-799

**Sub-tasks:**

- Identify facilities within the State's access control limits that will be maintained by the local agency
- Negotiate agreement with local agencies.
- Draft and execute agreement

**End product:**

Executed Maintenance Agreements

**205.35 Prepare and Execute Cooperative Agreement**

All activities involved in preparation and execution of Cooperative Agreement between Caltrans and a public agency.

**End Product:**

Executed cooperative agreement.

### 205.35.05 Prepare and Execute Cooperative Agreement for Environmental Process

All work involved in preparing and obtaining approval of cooperative agreements to begin the environmental process. Includes projects which are 100% State funded, jointly funded, locally funded, local sales tax measure, privately funded, and reimbursed. This task includes cooperative agreements which cover multi-phases which begin with the environmental phase.

#### Guidance

*Cooperative Agreement Manual*  
*Project Development Procedures Manual (PDPM), Chapter 3-10*  
*Project Development Procedures Manual (PDPM), Chapter 2-20, Article 20*  
*Project Development Procedures Manual (PDPM), Chapter 2-60, Article 30*

#### RBS

067-069  
 105-139  
 168-171

#### Sub-tasks:

- Cooperative Agreement Report, if required.
- Assign a Cooperative Agreement Number
- Prepare draft
- Obtain reviews
- Incorporate changes.
- Prepare transmittal memo.
- Execute Cooperative Agreement.
- Prepare and execute amendments.

#### End Product:

Approval of the cooperative agreement(s).

### 205.35.10 Prepare and Execute Cooperative Agreement for Design

All work involved in preparing and obtaining approval of cooperative agreements to begin the design process. Includes projects which are 100% State funded, jointly funded, locally funded, local sales tax measure, privately funded, and reimbursed. This task includes cooperative agreements which cover multi-phases which begin with the design phase. Included in this activity would be Highway Improvement Agreements. (Design - Construction, Design - Right of Way, and Design - Right of Way - Construction)

#### Guidance

*Cooperative Agreement Manual*  
*Project Development Procedures Manual (PDPM), Chapter 2-60, Article 30*  
*Project Development Procedures Manual (PDPM), Chapter 3-10*

#### RBS

067-069  
 105-139  
 220-279  
 308-310

#### Sub-tasks:

None Identified.

#### End Product:

Approval of the cooperative agreement(s) or Highway Improvement Agreements.

### 205.35.15 Prepare and Execute Cooperative Agreement for Construction

All work involved in preparing and obtaining approval of cooperative-type agreements to be able to begin a construction contract.

#### Guidance

*Cooperative Agreement Manual*  
*Project Development Procedures Manual (PDPM), Chapter 2-60, Article 30*  
*Project Development Procedures Manual (PDPM), Chapter 3-10*

#### RBS

067-069  
 105-139  
 500-509  
 510-515

#### Sub-tasks:

- Cooperative Agreement Report
- Cooperative Agreements for Construction and Construction Engineering
- Interagency Agreements
- Joint Power Agreements

- Escrow Agreements
- Contribution Agreements
- Memorandum of Understanding
- Preparation of a Draft Cooperative Agreement
- Review of a Draft Cooperative Agreement
- Preparation and Execution of a Final Cooperative Agreement

**End Product:**

Approval of all necessary Cooperative Agreement(s) to begin construction.

**205.35.20 Prepare and Execute Cooperative Agreement for R/W**

All work involved in preparing and obtaining approval of cooperative-type agreements to be able to begin any Right of Way activities.

**Guidance**

*Cooperative Agreement Manual*

*Project Development Procedures Manual (PDPM), Chapter 2-60, Article 30*

*Project Development Procedures Manual (PDPM), Chapter 3-10*

**RBS**

067-069

105-139

308-310

400-499

**Sub-tasks:**

None Identified.

**End Product:**

Approval of the Cooperative Agreement(s).

**205.40 Obtain Route Adoptions**

All work involved in preparing the route adoption map, exhibits, the CTC resolution, and route adoption reports for CTC action. Includes:

- New Public Road Connections
- New route adoptions
- Adopted freeway route denominated to a "controlled access highway"
- Traversable Highway Adoption
- Adoption of a temporary connection
- Route Re-designations
- Modifications to an existing adopted route
- Route Rescissions
- Deletion from the Freeway and Expressway System

**End Product:**

Obtain CTC approval

**205.40.05 Prepare Route Adoption Map****Guidance**

*Drafting and Plans Manual of Instruction, Article 3-2.2*

*Project Development Procedures Manual (PDPM), Chapter 2-60, Article 40*

**RBS**

220-279

296-302

**205.40.10 Prepare New Connection Request & Route Adoption for Submittal to CTC****Guidance**

*Drafting and Plans Manual of Instruction, Articles 3-2.2 & 3-2.6*

*Project Development Procedures Manual (PDPM), Chapter 2-60, Article 40 & 80*

**RBS**

105-139

168-171

220-279



**205.40.15 Place Route Adoption and Public Road Connection on CTC Agenda****Guidance**

*Project Development Procedures Manual (PDPM), Chapter 2-60, Article 40 & 80*

**RBS**

105-139  
220-279

**205.45 Obtain MOU from Tribal Employment Rights Office (TERO)**

Obtain Memorandum of Understanding from either the tribal government or the Tribal Rights Office (TERO) for Native American preference in hiring and for TERO Tax if on a reservation.

**Guidance****RBS**

105-139  
168-171

**Sub-tasks:**

None identified.

**End product:**

None Identified.

**205.50 Prepare and Execute Cooperative Agreement for Relinquishment**

Includes all work, on an active capital project that will supersede an existing state highway, in preparing a Relinquishment Agreement/Memorandum of Understanding with the local agency to relinquish existing state facilities and any collateral facilities.

*Note 1: All project development effort for relinquished facilities including traffic forecasts, material information, deflection study and PS&E preparation is to be charged to other appropriate WBS activity. For effort in other highway relinquishments, activities should be captured under EA 952137, MSA code R240.*

*Note 2: The relinquishment process is covered under WBS 300.25 .*

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 3-100*  
*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 110*  
*Project Development Procedures Manual (PDPM), Chapter 2-80, Section 30*

**RBS**

105-139  
220-279  
600-799

**Sub-tasks:**

- Discussions and resolutions of issues with local agency concerning relinquishment features.
- Arrange for special funding, if applicable
- Prepare a cooperative agreement for relinquishment

**End product:**

Executed Cooperative agreement



# 210 Prepare Preliminary Structures Design Data

Work involved in gathering/ verifying data needed to begin structures design activities. Sub products of this activity include Structures Preliminary Reports, Foundation Plans, Updated scope of work /estimates for Transportation Related Structures, and Preliminary Geology Reports.

This summary task contains activities for individual structures coded as 210.xx tasks. For a group of miscellaneous structures where work does not need to be tracked on an individual basis, use the task 210.95, in accordance with the section “Rules for Usage of the WBS”, sub-section “Pseudo Activities” on page 11 of this Guide.

## 210.xx Prepare Preliminary Structures Design Data for Structure xx

*Note: Where xx is the structure number, e.g. 210.01 for structure 1, 210.02 for structure 2, and so on up to 210.80 for structure 80.*

Work involved in gathering/verifying data needed to begin structures design activities.

Provide for tracking project development “by structure”. Activities for Structure xx for xx =01 (structure number 1) the activity is 210.01; for xx=02 (structure number 2) the activity is 210.02; and so on up to 210.80. Therefore allowing for 80 individual structures to be tracked.

The Structures Project Management Branch Functional Manager and the Structure Design Project Engineer/Structure Liaison/Structure Contract Manager are responsible for assigning each structure a number to correspond with the activity code, therefore ensuring that all staff working on the project EA are charging to the correct structure(s) activity code.

### End Product:

- Preliminary Structures Report
- Preliminary Structures Foundation Report
- Hydrology Report
- Draft Foundation Plan

## 210.xx.05 Review District Submittal

Bridge Site Data Submittal’ – form DS-P0048

### Guidance

*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 & 17*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 & 3*  
*Soils and Rock Logging Classification Manual (Field Guide)*

### RBS

220-279  
 312-315  
 317-321  
 345-348  
 600-799

## 210.xx.10 Perform Structure Site Investigation

This includes site and topographic survey of structure location used in preparing the preliminary structures report. The subsurface site investigations are performed under activity 215.xx.35

### Guidance

*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 & 17*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 & 3*  
*Soils and Rock Logging Classification Manual (Field Guide)*  
*Area Bridge Maintenance Engineer Manual, Sections 3.1 & 3.3*

### RBS

183-184  
 220-279  
 308-310  
 312-315  
 345-348  
 600-799

**210.xx.15 Prepare Preliminary Structure Report****Guidance**

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 10, Article 30*  
*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 & 17*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 & 3*  
*Soils and Rock Logging Classification Manual (Field Guide)*  
*Area Bridge Maintenance Engineer Manual, Sections 3.1 & 3.3*

**RBS**

183-184  
 220-279  
 345-348  
 600-799

**210.xx.20 Prepare Draft Foundation Plan****Guidance**

*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 & 17*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 & 3*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

316  
 322-325  
 345-348

**210.xx.25 Prepare Preliminary Structures Foundation Report**

Based on existing data for the location/vicinity before any field foundation investigation.

**Guidance**

*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 & 17*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 & 3*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

316  
 322-325  
 345-348

**210.xx.30 Prepare Hydrology Report**

Includes hydrology and hydraulics information

**Guidance**

*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 & 17*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 & 3*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

312-315  
 345-348

**210.95 Prepare Preliminary Structures Design Data for “Other” Structures**

This task and set of sub-tasks mirror task 210.xx, except it is used for a grouping of structures where the work does not need to be tracked on an individual structure basis. See more on the use of this “pseudo activity” in section “Rules for Usage of the WBS” on page 11 of this Guide.

Work involved in gathering/verifying data needed to begin structures design activities.

**End product:**

- Preliminary Structures Report
- Preliminary Structures Foundation Report
- Hydrology Report
- Draft Foundation Plan

**210.95.05 Review District Submittal**

Bridge Site Data Submittal' – form DS-P0048

**Guidance**

*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 & 17*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 & 3*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

220-279  
 312-315  
 345-348  
 600-799

**210.95.10 Perform Structure Site Investigation**

This includes site and topographic survey of structure location used in preparing the preliminary structures report. The subsurface site investigations are performed under activity 215.xx.20

**Guidance**

*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 & 17*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 & 3*  
*Soils and Rock Logging Classification Manual (Field Guide)*  
*Area Bridge Maintenance Engineer Manual, Sections 3.1 & 3.3*

**RBS**

183-184  
 220-279  
 308-310  
 312-315  
 345-348  
 600-799

**210.95.15 Prepare Preliminary Structure Report****Guidance**

*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 & 17*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 & 3*  
*Soils and Rock Logging Classification Manual (Field Guide)*  
*Area Bridge Maintenance Engineer Manual, Sections 3.1 & 3.3*

**RBS**

183-184  
 220-279  
 308-310  
 345-348  
 600-799

**210.95.20 Prepare Draft Foundation Plan****Guidance**

*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 & 17*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 & 3*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

308-310  
 316  
 322-325  
 345-348

**210.95.25 Prepare Preliminary Structures Foundation Report**

Based on existing data for the location/vicinity before any field foundation investigation.

**Guidance**

*Bridge Design Aids, Sections 10 & 11*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 & 17*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 & 3*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

316  
 322-325  
 345-348

### 210.95.30 Prepare Hydrology Report - Includes hydrology and hydraulics information

**Guidance**

*Bridge Design Aids, Sections 10 & 11*

*Bridge Design Details, Sections 1, 2, & 3*

*Bridge Design Memo to Designers, Sections 1 & 17*

*Bridge Design Specifications*

*OSFP Information & Procedures Guide, Chapters 2 & 3*

*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

312-315

345-348

# 215 Prepare Structures General Plans

Work involved in the preparation of preliminary plans and related estimates, including structures general plans; and the preparation of Foundation Recommendations and The Log of Test Borings.

*Note 1: Type Selection Meetings are a part of this activity.*

*Note 2: For seismic retrofit projects, ALL preliminary engineering effort leading to strategy determination is to be included in this activity.*

This summary task contains activities for individual structures coded as 215.xx tasks. For a group of miscellaneous structures where work does not need to be tracked on an individual basis, use the 215.95 task, in accordance with the section “Rules for Usage of the WBS”, sub-section “Pseudo Activities” on page 11 of this Guide. Certain activities in this 215 summary task need to be tracked for the overall project and the 215.90 task is provided.

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## 215.xx Prepare Structures General Plans for Structure xx

*Note: Where xx is the structure number, e.g. 215.01 for structure 1, 215.02 for structure 2, etc., and so on up to 215.80 for structure 80.*

Provide for tracking project development “by structure”. Activities for Structure xx where xx = 01 (structure number 1) the activity number is 215.01; for xx=02 (structure number 2) the activity is 215.02, and so on up to 215.80. This allows for 80 individual structures to be tracked.

The Structures Project Management Branch Functional Manager and the Structure Design Project Engineer/Structure Liaison/Structure Contract Manager are responsible for assigning each structure a number to correspond with the activity code, therefore ensuring that all staff working on the project EA are charging to the correct structure(s) activity code.

Work involved in the preparation of preliminary plans and related estimates, including structures general plans and the preparation of foundation recommendations and “The Log of Test Borings”. Preliminary Plan Approval Process (i.e., Type Selection Meetings, Seismic Retrofit Strategy Meetings, review of Buildings/Culverts/any other miscellaneous details as required) are part of this activity.

Approved preliminary plans are the approved General Plans, and additional preliminary plans for buildings, or any other miscellaneous details as required.

*Note: For all projects, the preliminary engineering effort should be completed prior to type selection or strategy meeting.*

### End product:

- Approved structure preliminary plans
- Preliminary plan quantities
- Preliminary plan estimates
- Foundation report
- Log of test borings for each structure

**215.xx.05 Develop Preliminary Design**

This includes:

- Review As-Built Plans and Preliminary Foundation Information
- Perform Design Field Review.
- Perform Preliminary Design/ Seismic Analysis

**Guidance**

*Bridge Design Aids, Sections 10, 11, & 15*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 through 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 through 6*  
*Pumping Plant Design Manual, Chapters 1 through 9*  
*Pumping Plant Design Manual, Appendix 8*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

183-184  
 198-199  
 220-279  
 345-348  
 600-799

**215.xx.10 Prepare Preliminary Plan Sheets****Guidance**

*Bridge Design Aids, Sections 10, 11, & 15*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 through 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 through 6*  
*Pumping Plant Design Manual, Chapters 1 through 9*  
*Pumping Plant Design Manual, Appendix 8*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

183-184  
 198-199  
 220-279  
 296-302  
 345-348  
 600-799

**215.xx.15 Develop Preliminary Quantities****Guidance**

*Bridge Design Aids, Sections 10, 11, & 15*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 through 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 through 6*  
*Pumping Plant Design Manual, Chapters 1 through 9*  
*Pumping Plant Design Manual, Appendix 8*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

183-184  
 198-199  
 220-279  
 345-348  
 600-799

**215.xx.20 Perform Foundation Field Investigation**

This activity mainly includes the sub-surface investigations but may also include site review (i.e., slide investigation).



**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 30*  
*Bridge Design Aids, Sections 10, 11, & 15*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 through 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 through 6*  
*Pumping Plant Design Manual, Chapters 1 through 9*  
*Pumping Plant Design Manual, Appendix 8*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

198-199  
 316  
 322-325  
 345-348

**215.xx.25 Prepare Foundation Report and Log of Test Borings**

Includes effort required for any subsequent revisions and addenda.

**Guidance**

*Bridge Design Aids, Sections 10, 11, & 15*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 through 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 through 6*  
*Pumping Plant Design Manual, Chapters 1 through 9*  
*Pumping Plant Design Manual, Appendix 8*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

198-199  
 316  
 322-325  
 345-348

**215.90 Prepare Structure General Plans for “Overall” Project**

Sub-activities listed for 215.90 are only tracked on an overall project basis and not by structure.

**End product:**

- Preliminary Estimates
- Approved Preliminary Plans

**215.90.05 Develop Preliminary Estimates****Guidance**

*Bridge Design Aids, Sections 10, 11, & 15*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 through 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 through 6*  
*Pumping Plant Design Manual, Chapters 1 through 9*  
*Pumping Plant Design Manual, Appendix 8*  
*Soils and Rock Logging Classification Manual (Field Guide)*  
*Area Bridge Maintenance Engineer Manual, Section 3.4*

**RBS**

183-184  
 198-199  
 220-279  
 296-302  
 600-799

**215.90.10 Approve Preliminary Plans (Type Selection/Strategy Mtg.)**

This activity includes:

- Update structures general plan sheet(s). May include aesthetics evaluation
- Conduct Type Selection and Strategy meetings.
- Delineate structures general plan(s). This activity occurs after Type Selection approval or Retrofit Strategy approval and results in the approved structure general plan. Update preliminary plan sheets developed in activity 215.xx.10.
- Develop quantities. This occurs after Type Selection approval or Retrofit Strategy approval. Update the preliminary quantities developed in activity 215.xx.15.
- Develop structures general plan cost estimate. This occurs after Type Selection approval or Retrofit Strategy approval. Update the preliminary general plan estimates developed in activity 215.xx.20.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 3-40, Section 50*  
*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 30*  
*Bridge Design Aids, Sections 10, 11, & 15*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 through 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 through 6*  
*Pumping Plant Design Manual, Chapters 1 through 9*  
*Pumping Plant Design Manual, Appendix 8*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

105-139  
 183-184  
 198-199  
 220-279  
 296-302  
 312-315  
 510-515  
 516-584  
 600-799

**215.95 Prepare Structures General Plans for “Other” Structures**

This task and set of sub-tasks mirror task 215.xx, except it is used for a grouping of structures where the work does not need to be tracked on an individual structure basis. See more on the use of this “pseudo activity” in the section “Rules for Usage of the WBS” on page 11 of this Guide.

An example of use of 215.95 would be doing minor work to an existing culvert, adding a bridge-mounted sign to an existing bridge, pedestals or shafts for an overhead sign, adding pedestals to existing bridge rail for light/sign/CCTV posts, etc., if the Structure Project Engineer and the Structure Project Management Branch decide that it is not necessary to track those activities individually.

In general, this task is for work involved in the preparation of preliminary plans and related estimates, including structures general plans and the preparation of foundation recommendations and “The Log of Test Borings”. Preliminary Plan Approval Process (i.e., Type Selection Meetings, Seismic Retrofit Strategy Meetings, review of Buildings/Culverts/any other miscellaneous details as required).

Approved preliminary plans are the approved General Plans, and additional preliminary plans for buildings, or any other miscellaneous details as required.

*Note: For all projects, the preliminary engineering effort should be completed prior to type selection or strategy meeting.*

**End product:**

- Approved structure preliminary plans
- Preliminary plan quantities
- Preliminary plan estimates
- Foundation report
- Log of test borings for each structure

**215.95.05 Develop Preliminary Design**

This includes

- Review As-Built Plans and Preliminary Foundation Information

- Perform Design Field Review.
- Perform Preliminary Design/ Seismic Analysis

**Guidance***Bridge Design Aids, Sections 10, 11, & 15**Bridge Design Details, Sections 1, 2, & 3**Bridge Design Memo to Designers, Sections 1 through 22**Bridge Design Practice**Bridge Design Specifications**OSFP Information & Procedures Guide, Chapters 2 through 6**Pumping Plant Design Manual, Chapters 1 through 9**Pumping Plant Design Manual, Appendix 8**Soils and Rock Logging Classification Manual (Field Guide)***RBS**

183-184

198-199

220-279

600-799

**215.95.10 Prepare Preliminary Plan Sheets****Guidance***Bridge Design Aids, Sections 10, 11, & 15**Bridge Design Details, Sections 1, 2, & 3**Bridge Design Memo to Designers, Sections 1 through 22**Bridge Design Practice**Bridge Design Specifications**OSFP Information & Procedures Guide, Chapters 2 through 6**Pumping Plant Design Manual, Chapters 1 through 9**Pumping Plant Design Manual, Appendix 8**Soils and Rock Logging Classification Manual (Field Guide)***RBS**

183-184

198-199

220-279

296-302

600-799

**215.95.15 Develop Preliminary Quantities****Guidance***Bridge Design Aids, Sections 10, 11, & 15**Bridge Design Details, Sections 1, 2, & 3**Bridge Design Memo to Designers, Sections 1 through 22**Bridge Design Practice**Bridge Design Specifications**OSFP Information & Procedures Guide, Chapters 2 through 6**Pumping Plant Design Manual, Chapters 1 through 9**Pumping Plant Design Manual, Appendix 8**Soils and Rock Logging Classification Manual (Field Guide)***RBS**

183-184

198-199

220-279

600-799

**215.95.20 Perform Foundation Field Investigation**

This activity mainly includes the sub-surface investigations but may also include site review (i.e., slide investigation).

**Guidance***Bridge Design Aids, Sections 10, 11, & 15**Bridge Design Details, Sections 1, 2, & 3**Bridge Design Memo to Designers, Sections 1 through 22**Bridge Design Practice**Bridge Design Specifications**OSFP Information & Procedures Guide, Chapters 2 through 6**Pumping Plant Design Manual, Chapters 1 through 9**Pumping Plant Design Manual, Appendix 8**Soils and Rock Logging Classification Manual (Field Guide)***RBS**

198-199

316

322-325

**215.95.25 Prepare Foundation Report and Log of Test Borings**

Includes effort required for any subsequent revisions and addenda.

**Guidance**

*Bridge Design Aids, Sections 10, 11, & 15*  
*Bridge Design Details, Sections 1, 2, & 3*  
*Bridge Design Memo to Designers, Sections 1 through 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*OSFP Information & Procedures Guide, Chapters 2 through 6*  
*Pumping Plant Design Manual, Chapters 1 through 9*  
*Pumping Plant Design Manual, Appendix 8*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

198-199  
 316  
 322-325

# 220 Perform Right of Way Engineering

Work involved in performing Right of Way Engineering work in advance of Appraisal and Acquisition activities. Includes preparing appraisal maps. The Right of Way Engineering effort required for environmental/hazardous material/paleontology mitigation is addressed under WBS activity 235.

## 220.05 Retrace and Perpetuate Existing Land Net for R/W Acquisition

Effort entails completion of work activities required prior to final boundary analysis and preparation of “land net/retracement map”. This is the next phase of the work effort initiated in WBS 160.20.

### End product:

- Filed Perpetuation Document
- Land net monument survey report

### 220.05.05 Perform Record Data Search

Includes search and acquisition of deeds, title reports and survey maps; analysis of said record data, and preparation of survey request to field search and tie additional land net monuments.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 10, Article 40*  
*Surveys Manual*

#### RBS

308-310

### 220.05.10 Perform Land Net Recovery and Field Ties

Includes field and related survey effort necessary to search, recover, describe, and tie-in existing controlling land survey monuments, calculating coordinates and preparing Corner Records.

#### Guidance

*Surveys Manual*

#### RBS

308-310

### 220.05.20 Perform Monument Perpetuation Surveys

This activity is required by the Professional Land Surveyors Act and includes preparation of lists of monuments to be perpetuated, referencing land net monuments for perpetuation through construction and field survey activities to effect said perpetuation.

#### Guidance

*Surveys Manual*

#### RBS

308-310

### 220.05.25 Prepare and File Perpetuation Documents

This activity is required by the Professional Land Surveyors Act and involves the production and filing of Records of Surveys and Section 8765(a) Maps only; does not include preparing Corner Records (see 220.05.10).

#### Guidance

*Surveys Manual*

#### RBS

308-310

## 220.10 Prepare Land Net Map

This work consists of boundary analysis, boundary determination, mapping of said boundaries and calculation of total ownership areas. Does not include effort accomplished in WBS 160.20.35, 220.05.10, and 220.05.25

#### Guidance

*Surveys Manual*

#### RBS

308-310

### Sub-tasks:

None identified

**End product:**

Land net map (historically referred to as “hardcopy” or “base map”).

**220.15 Prepare Right of Way Maps**

Includes all mapping efforts other than for cost estimate maps, land net maps, revisions and record maps. Also includes the certification to the sufficiency of the right of way by designers prior to finalizing the appraisal maps

*Note: Relinquishment and vacation maps are developed under WBS 300.25.*

**End product:**

Various Right of Way-related Maps

**220.15.05 Prepare Appraisal Map**

Includes preparation and transmittal of initial map(s) to the appraisal unit excluding hardship or protection parcels. Also includes all calculations required to tie new right of way boundaries to the existing land net and the computation of right of way, excess and remainder areas. Includes attest of R/W sufficiency determination from activity 185.25.15

**Guidance**

*Drafting and Plans Manual of Instruction*  
*Right of Way Manual - Forms and Exhibits, Chapter 6*  
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

**RBS**

308-310

**220.15.15 Prepare State or Federal Application Map**

Includes mapping for Transfer of Control and Possession agreements and D.O.T. easements.

**Guidance**

*Drafting and Plans Manual of Instruction*  
*Right of Way Manual - Forms and Exhibits, Chapter 6*  
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

**RBS**

308-310

**220.15.30 Prepare Comparable Sales Map****Guidance**

*Drafting and Plans Manual of Instruction*  
*Right of Way Manual - Forms and Exhibits, Chapters 6 & 7*  
*Right of Way Manual - Reference Version, Chapters 6 & 7*  
*Surveys Manual*

**RBS**

308-310

**220.15.35 Prepare Hardship or Protection Map**

Includes preparation of maps used for appraisal of advanced acquisition.

**Guidance**

*Drafting and Plans Manual of Instruction*  
*Right of Way Manual - Forms and Exhibits, Chapter 6*  
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

**RBS**

308-310

**220.15.95 Prepare “Other” Maps**

Includes permit maps, Federal Participation Maps, and others as required.

**Guidance**

*Drafting and Plans Manual of Instruction*  
*Right of Way Manual - Forms and Exhibits, Chapter 6*  
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

**RBS**

308-310

## 220.20 Prepare Acquisition Document

Includes all property acquisition document preparation work efforts excluding contract obligation transactions.

### End product:

- Legal Descriptions
- Deeds
- Resolution of Necessity Legal Descriptions

### 220.20.05 Prepare Deeds

Includes preparation of legal description and ancillary conveyance documents associated with the deed; does not include Director's deeds (see 220.25.05).

#### Guidance

*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

#### RBS

308-310

### 220.20.15 Prepare Resolution of Necessity and Plats

Includes description for Resolution of Necessity, any additional information for the filing of the complaint, and the preparation of any attendant map or plat.

#### Guidance

*Drafting and Plans Manual of Instruction*  
*Right of Way Manual - Forms and Exhibits, Chapter 6*  
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

#### RBS

308-310

## 220.25 Prepare Deeds Package to Fulfill Contract Obligations

Effort entails preparation of documents required to convey property rights to satisfy contractual obligations.

### End product:

- Director's Deeds and Plats
- Utility Deeds and Plats
- Other Deeds

### 220.25.05 Prepare Director's Deed and Plats

Includes preparation of Director's Deed and attendant maps or plats for contract obligations with other than a utilities entity.

#### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 6*  
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

#### RBS

308-310

### 220.25.15 Prepare Utility Legal Description and Plat

Legal description and plat prepared for fulfilling contract obligations with utility entities including JUA and CCUA

#### Guidance

*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

#### RBS

308-310

### 220.25.95 Prepare "Other" Deeds and Documents

Includes exchange transactions, correctory deeds, and attendant maps or plats as required.

#### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 6*  
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

#### RBS

308-310

## 220.30 Perform Right of Way Revisions

Includes all changes incorporated after submittal of initial appraisal map except changes which involve new ownerships.

### End Product:

Revised Deeds and/or maps

### 220.30.05 Perform Revision Initiated by Others

Includes the revision of any R/W Engineering products resulting from a requirement not originating within Right of Way which occurs after the submittal of the appraisal maps to the appraiser but not necessitating new ownership's. New ownership products should be planned under the appropriate WBS activity. Also includes revisions to land net maps, FHWA maps, acquisition documents, etc.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 20*  
*Right of Way Manual - Forms and Exhibits, Chapter 6*  
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

**RBS**

### 220.30.10 Perform Revision Initiated by Right of Way.

All work required to revise right of way lines, right of way take areas, maps and documents resulting from a requirement originating within R/W which occurs after the appraisal maps are submitted to the appraiser. If a revision necessitates new ownerships not previously mapped, work required on these new ownerships should be planned under the appropriate WBS activity. Also includes revisions to FHWA maps, land net maps, acquisition documents, etc.

#### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 6*  
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

**RBS**

308-310



# 225 Obtain Right of Way Interests for Project Right of Way Certification

Work involved in assuring that the State has legal and physical possession and right to enter on all land for the project necessary for deliverance of the Right of Way Certification.

## 225.50 Parcel and Project Documentation

Includes all work not specified in other Level 6 or 7 deliverables that lead to the Right of Way Certification of the project.

### Guidance

*Plans, Specifications, and Estimates Guide, Section 2-3.02A*  
*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 30, Article 30*  
*Right of Way Manual - Forms and Exhibits*  
*Right of Way Manual - Reference Version*

### RBS

400-499

### Sub-tasks:

None identified.

### End Product:

Right of Way Certification.

## 225.55 Obtain Right of Way Interests

Work involved in delivering necessary property rights for the project's Right of Way Certification.

### End product:

Necessary legal and physical possession and right to enter on all land.

### 225.55.05 Right of Way Appraisals

Work involved appraising property rights required for acquisition purposes.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 10, Article 40*  
*Project Development Procedures Manual (PDPM), Chapter 3-30, Article 20*  
*Right of Way Manual - Forms and Exhibits, Chapter 7*  
*Right of Way Manual - Reference Version, Chapter 7*

#### RBS

400-499

### 225.55.10 Right of Way Acquisition

Work involved acquiring property rights necessary for Right of Way Certification purposes.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 2-60, Article 90*  
*Right of Way Manual - Forms and Exhibits, Chapter 8*  
*Right of Way Manual - Reference Version, Chapter 8*

#### RBS

067-069  
 400-499

### 225.55.15 Right of Way Relocation Assistance

Work involved relocating occupants/personalty of acquired property rights necessary for Right of Way Certification purposes.

#### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 10*  
*Right of Way Manual - Reference Version, Chapter 10*

#### RBS

067-069  
 400-499

**225.55.20 Right of Way Clearance**

Work involved in clearing the right of way of improvements, either by selling or demolishing improvements necessary for Right of Way Certification purposes.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 12*  
*Right of Way Manual - Reference Version, Chapter 12*

**RBS**

400-499

**225.55.25 Right of Way Condemnation**

Work involved in delivering condemnation work necessary for Right of Way Certification purposes.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 9*  
*Right of Way Manual - Reference Version, Chapter 9*  
*Staking Information*  
*Surveys Manual*

**RBS**

067-069  
 308-310  
 400-499

# 230 Prepare Draft PS&E

Work involved in the preparation and review of draft roadway plans, specifications and estimates. Includes roadway design and preparation of functional PS&E's. Also includes incorporation of the Draft Structures PS&E into Draft District PS&E..

## 230.05 Prepare Draft Roadway Plans

Includes all activities, from the base maps (skeletons), such as design, delineation, field reviews, and internal/external coordination (see sub-tasks) necessary to develop draft roadway plan sheets for construction contract.

### End product:

Roadway Plans for draft PS&E district circulation.

### 230.05.05 Prepare Title Sheet

#### Guidance

#### RBS

220-279  
296-302

### 230.05.10 Prepare Typical Cross Sections

#### Guidance

*Drafting and Plans Manual of Instruction, Articles 4-2.2 & 4-2.5*  
*Highway Design Manual (HDM), Chapter 100, Topic 103 & Chapter 600, Topic 602*  
*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 10, Article 50*

#### RBS

220-279  
296-302

### 230.05.15 Prepare Key Map and Line Index

#### Guidance

#### RBS

220-279  
296-302

### 230.05.20 Prepare Roadway Layouts

#### Guidance

*Drafting and Plans Manual of Instruction, Article 4-2.5*

#### RBS

220-279  
296-302

### 230.05.25 Prepare Profile and Superelevation Sheets

#### Guidance

*Drafting and Plans Manual of Instruction, Article 4-2.5*

#### RBS

220-279  
296-302

### 230.05.30 Prepare Construction Details

#### Guidance

#### RBS

220-279  
296-302

**230.05.35 Prepare Contour Grading Plans****Guidance***Drafting and Plans Manual of Instruction, Article 4-2.7***RBS**

220-279

296-302

**230.05.40 Prepare Summary of Quantities Sheets****Guidance****RBS**

220-279

296-302

**230.05.45 Prepare Noise Barrier Plans****Guidance***Drafting and Plans Manual of Instruction, Article 4-2.2**Highway Design Manual (HDM), Chapter 1100**OTA Standard Drawings**Project Development Procedures Manual (PDPM), Chapter 3-150**Technical Noise Supplement**Traffic Noise Analysis Protocol***RBS**

220-279

296-302

**230.05.50 Prepare Retaining Wall Plans****Guidance***Caltrans Standard Plans**Drafting and Plans Manual of Instruction, Article 4-2.19**Highway Design Manual (HDM), Chapter 200, Topic 210**Project Development Procedures Manual (PDPM), Chapter 3-50, Section 30***RBS**

220-279

296-302

**230.05.55 Select Standard Plans****Guidance****RBS**

220-279

296-302

**230.05.60 Prepare Stage Construction and Detour Plans or Traffic Handling Plans****Guidance***Caltrans Standard Plans**Construction Manual, Section 2-30**Drafting and Plans Manual of Instruction, Article 4-2.14**Highway Design Manual (HDM), Chapter 100, Topic 106, Index 110.6**Plans, Specifications, and Estimates Guide, Section 5**Project Development Procedures Manual (PDPM), Chapter 1-30, Section 70 & Chapter 2-70, Section 20, Article 40 & Section 30, Article 10**Traffic Manual***RBS**

220-279

296-302

380-389

**230.05.65 Prepare Water Pollution Control Plans****Guidance****RBS**

220-279

296-302

**230.10 Prepare Draft Highway Planting Plans**

All activities, (such as design, field reviews, delineation, and internal/external coordination) (see sub-tasks) necessary to develop highway planting plan sheets for construction contract.

**End product:**

Highway Planting Plans for draft PS&E district circulation.

**230.10.05 Prepare Highway Planting Plans****Guidance**

*Caltrans Standard Plans*

*Drafting and Plans Manual of Instruction, Articles 4-2.2, 4-2.8, & 4-2.9*

*Highway Design Manual (HDM), Chapter 900*

*Plans, Specifications, and Estimates Guide, Sections 3, 4, & 5*

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 10, Article 50 & Section 20, Article 40 & Chapter 3-140*

**RBS**

296-302

340-344

**230.10.15 Prepare Plant List****Guidance****RBS**

296-302

340-344

**230.10.20 Prepare Irrigation Plans****Guidance****RBS**

296-302

340-344

**230.10.30 Prepare Irrigation Quantity Sheets****Guidance****RBS**

296-302

340-344

**230.15 Prepare Draft Traffic Plans**

All activities, (such as design, field reviews, delineation, and internal/external coordination) (see sub-tasks) necessary to develop traffic plan sheets for construction contract.

**End product:**

Traffic Plans for draft PS&E district circulation

**230.15.05 Prepare Signing and Pavement Delineation Plans****Guidance**

*Caltrans Standard Plans*

*Drafting and Plans Manual of Instruction, Articles 4-1.2, 4-2.14 - 16, 4-2.18, & 4-2.22*

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 70 7 & Chapter 2-70, Section 10, Article 50*

*Traffic Manual*

**RBS**

296-302

380-389

**230.15.10 Prepare Construction Area Signs Plans****Guidance**

*Drafting and Plans Manual of Instruction, Articles 4-2.16 & 4-2.18*

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 70 7 & Chapter 2-70, Section 10, Article 50*

*Traffic Manual*

**RBS**

296-302

380-389

**230.15.15 Prepare Traffic Electrical Plans****Guidance***Caltrans Standard Plans**Drafting and Plans Manual of Instruction, Article 4-1.2 & 4-2.22**Plans, Specifications, and Estimates Guide, Sections 3, 4, & 5**Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 40***RBS**

296-302

390-396

**230.20 Prepare Traffic Management Plan**

Activities necessary to update/develop the project's Traffic Management Plan (TMP).

**Guidance***Construction Manual, Section 2-30**Drafting and Plans Manual of Instruction, Article 4-2.14**Highway Design Manual (HDM), Chapter 100, Topic 110, Index 110.6**Project Development Procedures Manual (PDPM), Chapter 2-70, Section 30, Article 10***RBS**

296-302

380-389

**Sub-tasks:**

None Identified.

**End Product:**

TMP

**230.25 Prepare Draft Utility Plans**

All activities, (such as design, delineation, and internal/external coordination) (see sub-tasks) necessary to develop draft utility plan sheets for construction contract.

**End product:**

Utility Plans for draft PS&E district circulation

**230.25.05 Prepare "New Facility" Plans**

New utilities required to serve the facilities or new encroachments.

**Guidance***Cooperative Agreement Manual**Drafting and Plans Manual of Instruction, Article 4-2.11 & 4-2.12**Highway Design Manual (HDM), Chapter 800, Topic 803**Project Development Procedures Manual (PDPM), Chapter 2-60, Article 10 & 30***RBS**

220-279

296-302

**230.25.10 Prepare Utility Relocation Plans**

Includes sanitary sewer relocation plans. This includes preparation of the Utility Location Contract Plans. For effort to identify location of existing utilities use WBS 200.05 and 200.10

**Guidance***Drafting and Plans Manual of Instruction, Article 4-2.13***RBS**

220-279

296-302

**230.30 Prepare Draft Drainage Plans**

All activities, (such as design, delineation, field reviews, and internal/external coordination) (see sub-tasks) necessary to develop draft drainage plan sheets for construction contract.

**Guidance***Caltrans Standard Plans**Cooperative Agreement Manual**Drafting and Plans Manual of Instruction, Article 4-2.8 to 4-2.12**Highway Design Manual (HDM), Chapters 800, 820, & 850**Project Development Procedures Manual (PDPM), Chapter 1-30, Sections 90 & 110;**Chapter 2-60, Articles 10 & 30; Chapter 2-70, Section 20, Article 40; & Chapter 3-50, Section 30***RBS**

220-279

296-302

312-315

**Sub-tasks:**

None Identified.

**End product:**

Drainage Plans for draft PS&amp;E district circulation.

**230.35 Prepare Draft Specifications**

Activities necessary to develop the project draft Special Provisions.

**End product:**

Specifications ready for draft District PS&amp;E Circulation

**230.35.05 Develop Roadway Specifications****Guidance****RBS**

220-279

285-295

**230.35.10 Develop Highway Planting Specifications****Guidance***Project Development Procedures Manual (PDPM), Chapter 1-30, Section 70 & Chapter 2-70, Section 30, Article 30***RBS**

285-295

340-344

**230.35.15 Develop Traffic Specifications**

Includes preparation of lane closure charts.

**Guidance***Standard Special Provisions (SSPs)*  
*Standard Specifications***RBS**

285-295

380-389

**230.35.20 Develop Electrical Specifications****Guidance***Plans, Specifications, and Estimates Guide, Sections 1, 2, & 4***RBS**

285-295

390-396

**230.35.25 Develop Utility Specifications****Guidance****RBS**

220-279

285-295

400-499

**230.35.30 Develop Hydraulic Specifications****Guidance****RBS**

220-279

285-295

312-315

**230.35.35 Develop Water Pollution Control Specifications****Guidance****RBS**

168-171

220-279

285-295

**230.35.40 Develop Erosion Control Specifications****Guidance****RBS**

285-295

340-344

**230.40 Prepare Draft PS&E Quantities and Estimates**

Activities necessary to develop project quantities and estimates.

*Note: Delineation of Quantity Sheets included in development of plans (WBS 230.05, 230.10, 230.15, 230.25, 230.30.)*

**End product:**

Draft Quantities and Estimates ready for draft District PS&E Circulation

**230.40.05 Calculate Roadway Quantities and Estimate**

Includes preparation of roadway & other cross sections.

**Guidance**

*Caltrans Standard Plans*

*Drafting and Plans Manual of Instruction, Article 4-2.17*

*Plans, Specifications, and Estimates Guide, Section 3*

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 50 & Chapter 3-50, Section 30*

*Standard Specifications*

**RBS**

220-279

296-302

**230.40.10 Calculate Highway Planting Quantities and Estimate****Guidance**

*Caltrans Standard Plans*

*Plans, Specifications, and Estimates Guide, Section 3*

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 50*

*Standard Specifications*

**RBS**

220-279

296-302

**230.40.15 Calculate Drainage Quantities and Estimate****Guidance**

*Caltrans Standard Plans*

*Drafting and Plans Manual of Instruction, Article 4-2.11*

*Plans, Specifications, and Estimates Guide, Section 3*

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 50*

*Standard Specifications*

**RBS**

220-279

296-302

312-315

**230.40.20 Calculate Traffic Quantities and Estimate****Guidance**

*Plans, Specifications, and Estimates Guide, Section 3*

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 50*

**RBS**

296-302

380-389

**230.40.25 Calculate Electrical Quantities and Estimate****Guidance**

*Caltrans Standard Plans*

*Drafting and Plans Manual of Instruction, Article 4-2.11*

*Plans, Specifications, and Estimates Guide, Section 3*

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 50*

*Standard Specifications*

**RBS**

296-302

390-396



**230.40.30 Calculate Utility Quantities and Estimate**

Includes sanitary sewer relocation plans.

**Guidance**

*Caltrans Standard Plans*

*Drafting and Plans Manual of Instruction, Article 4-2.12*

*Highway Design Manual (HDM), Chapter 600, Topic 602, Index 602.1*

*Plans, Specifications, and Estimates Guide, Section 3 & 4-5.01*

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 50*

*Standard Specifications*

**RBS**

220-279

296-302

**230.40.35 Calculate Water Pollution Control Quantities and Estimate****Guidance****RBS**

220-279

296-302

**230.40.40 Calculate Erosion Control Quantities and Estimate****Guidance****RBS**

296-302

340-344

**230.55 Incorporate Structures Draft PS&E**

This activity does not include reviewing and commenting on the Draft PS&E which is included in activity 255.05.

**Guidance**

*Plans, Specifications, and Estimates Guide, Sections 1 & 2*

**RBS**

220-279

285-295

296-302

**Sub-tasks:**

None Identified.

**End product:**

A combined district Draft PS&E package.

**230.60 Review and Update Project Information for PS&E Package**

Includes all work necessary to conduct reviews and to update project information needed to begin production of the PS&E package and all of its components. Also includes the 60% Constructability Review.

*Note: The numbering of this level 6 task does not imply order or sequence. This task should be scheduled according to the project scheduling needs.*

**Guidance****RBS**

105-139

144

220-279

340-344

365-379

510-515

516-584

**Sub-tasks:**

No specific sub-task is identified at this time.

**End product:**

Updated project information for the production of the PS&E Package.



# 235 Mitigate Environmental Impacts and Clean-up Hazardous Waste

Work involved in the identification and mitigation of environmentally sensitive or hazardous waste sites as required to construct a capital outlay project. Includes long term mitigation monitoring efforts if necessary, within overall project scope.

## 235.05 Perform Environmental Mitigation

All work involved to accomplish environmental mitigation as determined in the environmental document.

### End Product:

Completed environmental mitigation according to the environmental document or permit.

### 235.05.05 Perform Historical Structures Mitigation

All work to move, sell, rehabilitate, or provide landscape buffers for historic structures. Includes historic buildings and historic engineering features such as bridges, roads, trails, canals, and railroads.

#### Guidance

*CT Guidelines for Identifying & Evaluating Historic Landscapes*  
*Environmental Handbook (Manual) Vol. 2, Chapters 2, 5, & 6*

#### RBS

172-173

### Sub-Tasks:

- Marketing Plan
- Historic American Building Survey (HABS) recordation
- Historic American Engineering Record (HAER)

### End Product:

Completion of all mitigation reported to FHWA, the State Historic Preservation Office (SHPO), and Advisory Council on Historic Preservation (ACHP).

### 235.05.10 Perform Archaeological and Cultural Mitigation

Consists of archaeological data recovery (Phase III) and other research related to the site's National Register of Historic Places (NRHP) eligibility (excavation, analyses, report preparation, and distribution). This activity is only applicable when an archaeological site is eligible for the National Register of Historic Places for its research potential under Criterion "d". This activity also includes non-excavation work related to the data recovery. Please refer to activity 165.20.60 for "Native American consultation for Phase III Archaeological Study".

#### Guidance

*Environmental Handbook (Manual) Vol. 2, Chapters 2 & 7*  
*Project Development Procedures Manual (PDPM), Chapter 1-20, Section 80, Article 50*

#### RBS

174-175

### Sub-Tasks:

- Pre-excavation burial agreement with Native Americans.
- Arrangements for Native American monitors.
- Curation agreement
- Site mapping.
- Right of Entry, if needed.
- Site visit with consultants and Native Americans.
- All field work.
- Analyses of recovered materials.
- Repatriations of human remains and sacred objects, if recovered.
- Preparation, submittal, and review of draft report on excavations
- Publish Phase III final report.

- Transfer collection and field notes and pay fees to curation facility.
- Transmit final report to FHWA, SHPO, ACHP, tribes, and the scientific community and obtain approval letters if required.
- Construction monitoring to ensure no additional effect to the site.
- Establish an Environmental Sensitive Area (ESA) to protect remaining portions of site.

**End Product:**

- Published Phase III final report on results of excavation and research
- Curated collection
- Fulfillment of mitigation requirements.

**235.05.15 Perform Biological Mitigation**

The design and monitoring of all biological mitigation measures as outlined in the final environmental document and included as a part of the parent project which created the impact. If a separate contract is used for biological mitigation, the effort required to develop that separate project should use the full range of WBS codes.

**Guidance**

*Construction Manual, Section 2-05*  
*Environmental Handbook (Manual) Vol. 3, Chapter 5*

**RBS**

176-177

**Sub-Tasks:**

- Prepare Mitigation Monitoring Plan
- Design and delineation of mitigation measures into project plans.
- Preparation of special provisions
- Reviews by affected units and regulatory agencies,
- Prepare for and conduct construction pre-job meeting to discuss mitigation requirements
- Monitor construction and post construction activities
- Prepare and distribute monitoring reports

**End Product:**

Fulfillment of biological mitigation requirements

**235.05.20 Perform Environmental Mitigation R/W Work**

This level 7 activity contains R/W effort in support of Environmental Mitigation Parcel work. It involves Right of Way Engineering, appraisal and acquisition effort connected to a mitigation parcel not covered in WBS activities 220 and 225.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapters 7 & 8*  
*Right of Way Manual - Reference Version, Chapters 7 & 8*  
*Surveys Manual*

**RBS**

308-310  
 400-499

**Sub-Tasks:**

- Engineering of Mitigation parcel
- Appraise Mitigation parcel
- Acquire Mitigation parcel
- Surveys of Mitigation parcel
- Transfer of Mitigation parcel to another agency

**End Product:**

Parcel(s) acquired for Mitigation and all R/W Mitigation work complete (includes transfer of mitigation parcel to another agency).

**235.05.25 Perform Paleontology Mitigation**

All tasks related to the recovery of important paleontological resources affected by the project related activities, contract (or task order) oversight, coordination and monitoring of field work, report review.

*Note: See WBS 100 for tasks and activities covering the preparation and administration of consultant contracts or task orders.*

**Guidance**
**RBS**
**Sub-Tasks:**

- Review and update of Preliminary Paleontological Work Plan to a final Mitigation Plan
- Contract oversight
- Review of consultant-prepared reports on mitigation work.

**End Product:**

Final report on recovery (mitigation) of important paleontological resources and certificate of compliance with mitigation commitments for inclusion in project files.

**235.10 Perform Detailed Site Investigation for Hazardous Waste**

District will perform a detailed site investigation either through development of a task order using the Statewide Hazardous Waste Investigation Contract for the investigation or the development of an investigation work plan by the consultant for the investigation of the hazardous waste site. The investigation should be adequate to fully characterize the contamination and identify appropriate and feasible alternatives for the cleanup of the contamination.

**End Product:**

A detailed hazardous waste remedial investigation and feasibility report detailing the investigation and outlining the feasible remedial technologies applicable to the particular HW site.

**235.10.05 Obtain Right or Permit for Hazardous Waste Site Investigations**

The District Hazardous Waste Management group is to request by memorandum from District Right of Way a right or permit to enter onto an identified property for the purpose of conducting a hazardous waste site investigation. The HWM group is to supply technical support to R/W for purposes of obtaining the right or permit to enter. Coordinate effort with Legal if necessary. Does not include miscellaneous acquisition by R/W Contracts; e.g. mobile homes, amended contracts, leasehold interests, signboards, waivers, etc. Adequate time should be requested to ensure completion of the detailed site investigation.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 3-30*  
*Right of Way Manual - Forms and Exhibits, Chapter 8*  
*Right of Way Manual - Reference Version, Chapter 8*

**RBS**

400-499

**235.10.10 Perform Surveys to Locate Hazardous Waste Sites**

Includes effort to District to determine which HW site identified will require a detailed site investigation.

**Guidance**

*Surveys Manual*

**RBS**

308-310

**235.10.15 Conduct Detailed Investigation**

Includes effort in Develop a Detailed Site Investigation Task Order to use the Statewide Hazardous Waste Contract's consultants to conduct a detailed site investigation and feasibility study or develop a work plan for conducting the detailed investigation. The site investigation will be performed by consultant under the direction and control of the district hazardous waste task order manager.

**Guidance**
**RBS**

### 235.15 Develop Hazardous Waste Management Plan

The remedial investigation and feasibility studies of potential mitigation strategies for the HW site constitute the Hazardous Waste Management Plan. The type and complexity of the HWMP is determined by the Project Manager. A part of the HWMP is the development of the RAD (remedial action design). This is the actual plan necessary for implementing the remediation. The RAD may be prepared during the HW investigation or by the district, depending on the mitigation selected.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 3-30*

**RBS**
**Sub-Tasks:**

- Develop RAD, which may involve task order
- Review RAD and determine scope of HWMP
- Develop HWMP
- Approve HWMP

**End Product:**

- Hazardous Waste Management Plan
- Remedial Action Design

### 235.20 Prepare Hazardous Waste PS&E

The hazardous waste management plan and the associated RAD (remedial action design) requires the development of hazardous waste remediation design plans, specifications and estimates. The PS&E is used by the district to contract for the actual cleanup of the hazardous waste situation. The PS&E can be either completed by the District project development staff with assistance from hazardous waste staff or a task order under the statewide hazardous remedial design contract can be developed by the District for the development of design and PS&E. If a separate contract is used, the effort required to develop that separate project should use the full range of WBS codes.

**Guidance**

*Project Development Procedures Manual (PDPM), Chapter 3-30*

**RBS**

220-279

296-302

**Sub-Tasks:**

- Review HWMP
- Determine how the PS & E will be prepared, either by Task Order or in-house
- Consultation with PS & E preparer
- Task Order oversight & administration
- Review PS &E, including reviews by District and HQ functions.

**End Product:**

Remedial action design and PS&E

### 235.25 Perform Hazardous Waste Clean-up

The mitigation (cleanup) will require a contract and PS&E based on the remedial action design. District project development is responsible for the hazard waste cleanup PS&E. District Construction is responsible for administration of the cleanup contract. Cleanup of the site will be completed by contract prior to the transportation project construction. In exceptional cases, cleanup of the HW will be accomplished as part of the construction contract. In these cases, approval of the Chief Engineer is required. The District shall use develop appropriate detailed special provision for inclusion into the PS&E.

*Note: Clean-up activities are performed by contract either before construction or as part of it.*

**Guidance**
**RBS**

**Sub-Tasks:**

None identified.

**End Product:**

Remediation of the contamination and hazardous waste condition.

**235.30 Certify Freedom of Hazardous Waste**

Final review and approval of the Certificate of Sufficiency, including validation of prior site investigation findings either by field inspection or other work as needed. If a proposed acquisition is outside the boundary of previous studies for project or ISA, a more detailed investigation may be needed before acquisition. If prior studies indicate that a situation exists where some actions by the existing owner is required, progress of that action (including tank removal), if any, will be assessed and further recommendations made as needed.

**Guidance**

*Environmental Handbook (Manual) Vol. 3, Chapter 5, Sections 5-2.6 & 5-2.7*

**RBS****Sub-Tasks:**

- Review of R/W Certification for consistency with prior project scope.
- Field review of site
- Verification of status of any recommended remediation (tank removal) by owner
- Preparation and approval of the Certificate of Sufficiency for acquisition

**End Product:**

Completed certificate of sufficiency with any necessary recommendations.

**235.35 Perform Long Term Mitigation Monitoring**

Work involved in the monitoring of mitigation sites over an extended period to ensure compliance with objectives of the permit issued by the regulatory agency. Includes work beyond the scope of activity 235.05.15.

**Guidance****RBS**

105-139

168-171

176-177

220-279

600-799

**Sub-Tasks:**

- Filed review of site
- Develop and submit performance reports to the regulatory agency
- Perform remedial action to correct deficiencies

**End Product:**

Acceptance of the permit by the regulatory agency.





# 240 Prepare Draft Structures PS&E

Work involved in the development of the final design and preparation of draft structures plans, specifications, and estimate. Includes Foundation Review.

Similar to WBS 215, Prepare Structures General Plans, a summary task at Level 6 is added and coded as 240.xx, to provide for planning work based on individual structures. A Level 6 product, 240.85, is added to define effort for the oversight of design and preparation of the overall project’s plans. This product is different than that, which is defined as 240.90. For a group of miscellaneous structures where work does not need to be planned and monitored on an individual basis, use 240.95 task in accordance with the section “Rules for Usage of the WBS”, sub-section “Pseudo Activities” on page 11 of this Guide.

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## 240.xx Prepare Draft Structure PS&E for Structure xx

*Note: Where xx is the structure number, e.g. 240.01 for structure 1, 240.02 for structure 2, etc., up to 240.80 for structure 80.)*

Provide for tracking project development “by structure”. Activities for Structure xx for xx = 01 (structure number 1) the activity is 240.01; for xx=02 (structure number 2) the activity is 240.02 and so on up to 240.80, therefore allowing for 80 individual structures to be tracked.

The Structures Project Management Branch Functional Manager and the Structure Design Project Engineer/Structure Liaison/Structure Contract Manager are responsible for assigning each structure a number to correspond with the activity code, therefore ensuring that all staff working on the project EA are charging to the correct structure(s) activity code.

Work involved in the development of the final design and preparation of draft structures plans, specifications, and estimate. Includes Foundation Review (review of design of each foundation of each structure).

**End Product:**

Draft Structures Plans, Specifications & Estimate Package

### 240.xx.05 Perform Design

The work done by an engineer to produce the original structure design calculations, and to develop information necessary to prepare the unchecked details. This work is primarily done by the structure designer, but support work is also done by support staff such as other engineers (including specialists), architects, etc.

Guidance	RBS
<i>Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 30</i>	183-184
<i>Bridge Design Aids, Sections 1-9, 11, &amp; 13-15</i>	198-199
<i>Bridge Design Details, Sections 1-20</i>	220-279
<i>Bridge Design Memo to Designers, Sections 1- 22</i>	345-348
<i>Bridge Design Practice</i>	600-799
<i>Bridge Design Specifications</i>	
<i>Building Specifications</i>	
<i>MEWW Standard Drawings</i>	
<i>OTA Design Manual</i>	
<i>OTA Standard Drawings</i>	
<i>Pumping Plant Design Manual, Chapters 10-16</i>	
<i>Pumping Plant Design Manual, Appendices 1-6</i>	
<i>Soils and Rock Logging Classification Manual (Field Guide)</i>	

**Sub-Tasks:**

- Perform Structures Design Calculations
- Develop Unchecked Details

- Delineate Structures Unchecked Details (This activity for delineation by design engineer. For delineation by detailers of unchecked details and unchecked plan sheets see activity 240.xx.10)

**End Product:**

- Complete analysis
- Design Notes
- Sketches (that are used to prepare plan sheets)

**240.xx.10 Prepare Plan Sheets**

The work performed by the structural technicians to prepare the Structure Plan sheets.

**Guidance**

*Bridge Design Aids, Sections 1-9, 11, & 13-15*  
*Bridge Design Details, Sections 1-20*  
*Bridge Design Memo to Designers, Sections 1- 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*Building Specifications*  
*MEWW Standard Drawings*  
*OTA Design Manual*  
*OTA Standard Drawings*  
*Pumping Plant Design Manual, Chapters 10-16*  
*Pumping Plant Design Manual, Appendices 1-6*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

183-184  
 198-199  
 220-279  
 296-302  
 345-348  
 600-799

**Sub-Tasks:**

None Identified.

**End Product:**

Structure Plan Sheets

**240.xx.15 Check Design and Plan Sheets**

An engineer (different than the engineer who did the original design) checks a set of the plan sheets and performs an independent structure analysis.

Redesign charged to 240.xx.05 and detailing to 240.xx.10.

**Guidance**

*Bridge Design Aids, Sections 1-9, 11, & 13-15*  
*Bridge Design Details, Sections 1-20*  
*Bridge Design Memo to Designers, Sections 1- 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*Building Specifications*  
*MEWW Standard Drawings*  
*OTA Design Manual*  
*OTA Standard Drawings*  
*Pumping Plant Design Manual, Chapters 10-16*  
*Pumping Plant Design Manual, Appendices 1-6*  
*Soils and Rock Logging Classification Manual (Field Guide)*  
*Area Bridge Maintenance Engineer Manual, Section 3.4*

**RBS**

183-184  
 198-199  
 220-279  
 345-348  
 600-799

**Sub-Tasks:**

- Perform Structures Design Check (independent check by a design engineer other than the design engineer who did the original design calculations (see 240.xx.05))
- Review Checked Details

**End Product:**

Checked Structure Plan Sheets

**240.xx.20 Prepare Quantities**

Quantities calculated by structure design staff for the P&Q package.

**Guidance**

Caltrans Standard Plans  
 Standard Specifications  
 Bridge Design Aids, Sections 1-9, 11, & 13-15  
 Bridge Design Details, Sections 1-20  
 Bridge Design Memo to Designers, Sections 1- 22  
 Bridge Design Practice  
 Bridge Design Specifications  
 Building Specifications  
 MEWW Standard Drawings  
 OTA Design Manual  
 OTA Standard Drawings  
 Pumping Plant Design Manual, Chapters 10-16  
 Pumping Plant Design Manual, Appendices 1-6  
 Soils and Rock Logging Classification Manual (Field Guide)

**RBS**

183-184  
 198-199  
 220-279  
 296-302  
 345-348  
 600-799

**Sub-Tasks:**

None identified

**End Product:**

Quantity calculations for all items of structure work.

**240.85 Overall Draft PS&E Development****240.85**

Work involved in the development of the overall project's plans. Activities under this task are tracked on an overall project basis and not by individual structures.

Typically this is work done by the Structures Project Engineer and the Design Senior that does not apply to the specific tasks as related to each individual structures within overall project. Activities such as the technical coordination of the project, technical project meetings, or other non-specific activities that are directly related to the development of the Draft PS&E package are all included in this product.

**Guidance**

Bridge Design Aids, Sections 1-9, 11, & 13-15  
 Bridge Design Details, Sections 1-20  
 Bridge Design Memo to Designers, Sections 1- 22  
 Bridge Design Practice  
 Bridge Design Specifications  
 Building Specifications  
 MEWW Standard Drawings  
 OTA Design Manual  
 OTA Standard Drawings  
 Pumping Plant Design Manual, Chapters 10-16  
 Pumping Plant Design Manual, Appendices 1-6  
 Soils and Rock Logging Classification Manual (Field Guide)

**RBS**

183-184  
 198-199  
 220-279  
 345-348  
 600-799

**Sub-Tasks:**

None identified.

**End Product:**

Overall project's structures plans

**240.90 Prepare Draft Structures PS&E for "Overall" Project 240.90**

Work involved in the development of the final design and preparation of the overall project's plans, specifications, and estimate. Activities under this task are tracked on an overall project basis and not by structure.

**240.90.15 Perform Foundation Review**

Foundation review by Office of Structure Foundations (OSF) staff to review the design of foundations. Also OSF review of plans and foundations recommendations to ensure conformity.

**Guidance**

*Bridge Design Aids, Sections 1-9, 11, & 13-15*  
*Bridge Design Details, Sections 1-20*  
*Bridge Design Memo to Designers, Sections 1- 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*Building Specifications*  
*MEWW Standard Drawings*  
*OTA Design Manual*  
*OTA Standard Drawings*  
*Pumping Plant Design Manual, Chapters 10-16*  
*Pumping Plant Design Manual, Appendices 1-6*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

198-199  
 316  
 322-325  
 345-348

**Sub-Tasks:**

None Identified.

**End Product:**

Concurrence by OSF that foundation recommendations have been properly incorporated into the project.

**240.90.20 Prepare Draft Specifications**

Prepare Draft Specifications by the Structures Specifications section of the Structures Specifications & Estimating Branch using the Checked Plans and the item list.

**Guidance**

*Standard Special Provisions (SSPs)*  
*Standard Specifications*  
*Bridge Design Aids, Sections 1-9, 11, & 13-15*  
*Bridge Design Details, Sections 1-20*  
*Bridge Design Memo to Designers, Sections 1- 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*Building Specifications*  
*MEWW Standard Drawings*  
*OTA Design Manual*  
*OTA Standard Drawings*  
*Pumping Plant Design Manual, Chapters 10-16*  
*Pumping Plant Design Manual, Appendices 1-6*  
*Soils and Rock Logging Classification Manual (Field Guide)*

**RBS**

198-199  
 220-279  
 285-295  
 345-348  
 600-799

**Sub-Tasks:**

None Identified.

**End Product:**

Set of Draft Specifications to be part of the Draft Structures PS&E package.

**240.90.25 Prepare Estimate**

Prepare Structures Estimate working days/BEES by the Structures Estimating section of the Structures Specifications & Estimating Branch using the Checked Plans and the quantity calculations.

<b>Guidance</b>	<b>RBS</b>
<i>Caltrans Standard Plans</i>	198-199
<i>Project Development Procedures Manual (PDPM), Chapter 2-70, Section 20, Article 50</i>	220-279
<i>Standard Specifications</i>	285-295
<i>Bridge Design Aids, Sections 1-9, 11, &amp; 13-15</i>	345-348
<i>Bridge Design Details, Sections 1-20</i>	600-799
<i>Bridge Design Memo to Designers, Sections 1- 22</i>	
<i>Bridge Design Practice</i>	
<i>Bridge Design Specifications</i>	
<i>Building Specifications</i>	
<i>MEWW Standard Drawings</i>	
<i>OTA Design Manual</i>	
<i>OTA Standard Drawings</i>	
<i>Pumping Plant Design Manual, Chapters 10-16</i>	
<i>Pumping Plant Design Manual, Appendices 1-6</i>	
<i>Soils and Rock Logging Classification Manual (Field Guide)</i>	

**Sub-Tasks:**

None Identified.

**End Product:**

Draft Marginal Estimate/working days to be part of the Draft Structures PS&E package.

**240.90.30 Review Draft Plans, Specifications, and Estimate**

Includes all functional reviews of the Structures Draft Plans, Specifications & Estimate. District review of structures draft PS&E is included in WBS activity 255.05.

<b>Guidance</b>	<b>RBS</b>
<i>Bridge Design Aids, Sections 1-9, 11, &amp; 13-15</i>	183-184
<i>Bridge Design Details, Sections 1-20</i>	198-199
<i>Bridge Design Memo to Designers, Sections 1- 22</i>	220-279
<i>Bridge Design Practice</i>	285-295
<i>Bridge Design Specifications</i>	312-315
<i>Building Specifications</i>	316
<i>MEWW Standard Drawings</i>	317-321
<i>OTA Design Manual</i>	322-325
<i>OTA Standard Drawings</i>	345-348
<i>Pumping Plant Design Manual, Chapters 10-16</i>	510-515
<i>Pumping Plant Design Manual, Appendices 1-6</i>	516-584
<i>Soils and Rock Logging Classification Manual (Field Guide)</i>	600-799
<i>Area Bridge Maintenance Engineer Manual, Section 3.4</i>	

**Sub-Tasks:**

- Address Specification & Estimate comments
- Delineate Draft Structures PS&E (delineation due to any comments made by the Structure Specifications & Estimating Branch that require revisions to the plans).

**End Product:**

Draft Structures PS&E package.

**240.95 Prepare Draft Structure PS&E for “Other” Structures 240.95**

In accord with the rules for use of a pseudo activity, the Structure Project Engineer can group miscellaneous structures and report on work for the group using this series of tasks. See section “Rules for Usage of the WBS” on page 11 of this Guide for more information on use of this pseudo activity.

For example, 240.95 might include doing minor work to an existing culvert, adding a bridge-mounted sign to an existing bridge, pedestals or shafts for an overhead sign, adding pedestals to existing bridge rails for light/sign/CCTV posts, etc., if the Structure Project Engineer and the Structure Project Management Branch decide that it is not necessary to track such work individually.

### 240.95.05 Perform Design

The work done by an engineer to produce the original structure design calculations, and to develop information necessary to prepare the unchecked details. This work is primarily done by the structure designer, but support work is also done by support staff such as other engineers (including specialists), architects, etc.

#### Guidance

*Bridge Design Aids, Sections 1-9, 11, & 13-15*  
*Bridge Design Details, Sections 1-20*  
*Bridge Design Memo to Designers, Sections 1- 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*Building Specifications*  
*MEWW Standard Drawings*  
*OTA Design Manual*  
*OTA Standard Drawings*  
*Pumping Plant Design Manual, Chapters 10-16*  
*Pumping Plant Design Manual, Appendices 1-6*  
*Soils and Rock Logging Classification Manual (Field Guide)*

#### RBS

183-184  
 198-199  
 220-279  
 345-348  
 600-799

#### Sub-Tasks:

- Perform Structures Design Calculations
- Develop Unchecked Details
- Delineate Structures Unchecked Details (This activity for delineation by design engineer. For delineation by detailers of unchecked details and unchecked plan sheets see activity 240.95.10)

#### End Product:

- Complete analysis
- Design Notes
- Sketches (that are used to prepare plan sheets)

### 240.95.10 Prepare Plan Sheets

The work performed by the structural technicians to prepare the Structure Plan sheets.

#### Guidance

*Bridge Design Aids, Sections 1-9, 11, & 13-15*  
*Bridge Design Details, Sections 1-20*  
*Bridge Design Memo to Designers, Sections 1- 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*Building Specifications*  
*MEWW Standard Drawings*  
*OTA Design Manual*  
*OTA Standard Drawings*  
*Pumping Plant Design Manual, Chapters 10-16*  
*Pumping Plant Design Manual, Appendices 1-6*  
*Soils and Rock Logging Classification Manual (Field Guide)*

#### RBS

183-184  
 198-199  
 220-279  
 296-302  
 345-348  
 600-799

#### Sub-Tasks:

None Identified.

#### End Product:

Structure Plan Sheets

## 240.95.15 Check Design and Plan Sheets

An engineer (different than the engineer who did the original design) checks a set of the plan sheets and performs an independent structure analysis.

Redesign charged to 240.95.05 and detailing to 240.95.10.

### Guidance

*Bridge Design Aids, Sections 1-9, 11, & 13-15*  
*Bridge Design Details, Sections 1-20*  
*Bridge Design Memo to Designers, Sections 1- 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*Building Specifications*  
*MEWW Standard Drawings*  
*OTA Design Manual*  
*OTA Standard Drawings*  
*Pumping Plant Design Manual, Chapters 10-16*  
*Pumping Plant Design Manual, Appendices 1-6*  
*Soils and Rock Logging Classification Manual (Field Guide)*

### RBS

183-184  
 198-199  
 220-279  
 345-348  
 600-799

### Sub-Tasks:

- Perform Structures Design Check (independent check by a design engineer other than the design engineer who did the original design calculations (see 240.95.05))
- Review Checked Details

### End Product:

Checked Structure Plan Sheets

## 240.95.20 Prepare Quantities

Quantities calculated by structure design staff for the P&Q package.

### Guidance

*Bridge Design Aids, Sections 1-9, 11, & 13-15*  
*Bridge Design Details, Sections 1-20*  
*Bridge Design Memo to Designers, Sections 1- 22*  
*Bridge Design Practice*  
*Bridge Design Specifications*  
*Building Specifications*  
*MEWW Standard Drawings*  
*OTA Design Manual*  
*OTA Standard Drawings*  
*Pumping Plant Design Manual, Chapters 10-16*  
*Pumping Plant Design Manual, Appendices 1-6*  
*Soils and Rock Logging Classification Manual (Field Guide)*

### RBS

183-184  
 198-199  
 220-279  
 296-302  
 345-348  
 600-799

### Sub-Tasks:

None identified

### End Product:

Quantity calculations for all items of structure work.





# 245 Post Right of Way Certification Work

Work involved in assuring that all Right of Way deliverables are completed after the project has been certified as mentioned in WBS 225.

## 245.50 Parcel and Project Documentation

Includes all work not specified in other Level 6 or 7 deliverables that lead to Right of Way project closeout.

### Guidance

*Plans, Specifications, and Estimates Guide, Section 2-3.02A*  
*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 30, Article 30*  
*Right of Way Manual - Forms and Exhibits*  
*Right of Way Manual - Reference Version*

### RBS

400-499

### Sub-tasks:

None identified.

### End Product:

Right of Way project closeout or Final Voucher of the project.

## 245.55 Close Out Right of Way Interests

Work involved in delivering required property rights for the project's Right of Way closeout.

### End product:

- All real property rights and interests acquired.
- All Right of Way processes and files completed.

### 245.55.05 Right of Way Appraisals

Work involved appraising property rights required for acquisition purposes.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 2-70, Section 10, Article 40*  
*Project Development Procedures Manual (PDPM), Chapter 3-30, Article 20*  
*Right of Way Manual - Forms and Exhibits, Chapter 7*  
*Right of Way Manual - Reference Version, Chapter 7*

#### RBS

400-499

### 245.55.10 Right of Way Acquisition

Work involved acquiring property rights required for Right of Way project closeout.

#### Guidance

*Project Development Procedures Manual (PDPM), Chapter 2-60, Article 90*  
*Right of Way Manual - Forms and Exhibits, Chapter 8*  
*Right of Way Manual - Reference Version, Chapter 8*

#### RBS

067-069

400-499

### 245.55.15 Right of Way Relocation Assistance

Work involved relocating occupants/personality of acquired property rights required for Right of Way project closeout.

#### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 10*  
*Right of Way Manual - Reference Version, Chapter 10*

#### RBS

067-069

400-499

### 245.55.20 Right of Way Clearance

Work involved in clearing the right of way of improvements, either by selling or demolishing improvements required for Right of Way project closeout.

#### Guidance

*Right of Way Manual - Forms and Exhibits, Chapter 12*  
*Right of Way Manual - Reference Version, Chapter 12*

#### RBS

400-499

## 245.55.25 Right of Way Condemnation

Work involved in delivering condemnation work required for Right of Way project closeout.

### **Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 9*

*Right of Way Manual - Reference Version, Chapter 9*

*Staking Information*

*Surveys Manual*

### **RBS**

*067-069*

*308-310*

*400-499*

# 250 Prepare Final Structures PS&E Package

Work involved in addressing District's comments on the Draft Structures PS&E and incorporating them into the final structures package. Also, incorporates any Engineer ESC Office of Office Engineer (OOE) and external agency comments on the final structure PS&E package (review package with unsigned, reduced prints) into final structures PS&E EXPEDITE package.

## 250.10 Finalize Structures PS&E Package

Finalize Structures PS&E package. Forward copies of Final Structures PS&E package to the District (to be combined by the District with the Final District PS&E package, see activity 255.20) and to the OOE. The OOE reviews and returns comments on the Final Structure PS&E package, see activity 260.15.05. Put together and forward Structure PS&E EXPEDITE package to OOE when District is ready to forward the Final PS&E EXPEDITE package to OOE. This activity also includes the effort required to update the package when OOE requires a structures PS&E re-submittal.

### Guidance

*Bridge Design Aids, Section 11*  
*Bridge Design Memo to Designers, Sections 1, 2, & 17*

### RBS

183-184  
 198-199  
 220-279  
 285-295  
 296-302  
 345-348  
 600-799

### Sub-Tasks:

- Any additional design revisions to Structures Plans
- Review and incorporate District and OOE comments into Final Structures PS&E package
- Any additional delineation for Final Structures PS&E package due to OOE comments

### End Product:

(unless 250.15, External Review is required and planned)

- Final Structure PS&E package (for review with unsigned reduced plans) to OOE.
- Final Structures PS&E EXPEDITE package with final signed plans, updated BEES, working day statement, copy of railroad insurance form (if required), copies of all structure foundation data to be sent to OOE to be combined and reviewed together with the Final District PS&E EXPEDITE package.

## 250.15 External Review of Structures PS&E Package

Forward PS&E package to the appropriate agencies that perform the external review. Incorporate the external agency comments into the Structures PS&E package.

### Guidance

*Bridge Design Aids, Section 11*  
*Bridge Design Memo to Designers, Sections 1, 2, & 17*

### RBS

198-199  
 285-295  
 345-348

### Sub-Tasks:

- Forward plans and specification to State Fire Marshal and Division of the State Architect for review.
- Incorporate State Fire Marshal and Division of the State Architect comments on plans and specification.
- Incorporate the revisions into the PS&E package.

**End Product:**

- Final Structure PS&E package (for review with unsigned reduced plans) to OOE.
- Final Structures PS&E EXPEDITE package with final signed plans, updated BEES, working day statement, to be sent to OOE to be combined and reviewed together with the Final District PS&E EXPEDITE package.

# 255 Circulate, Review, and Prepare Final District PS&E Package

Work involved in the circulation and review of the Draft District PS&E package. Includes addressing review comments and preparing the Final District PS&E package.

## 255.05 Circulate & Review Draft District PS&E Package

This activity includes reproduction, distribution, coordination, circulation of the project's plans, specifications and estimate . This activity also includes the review and, comment as well as reaching consensus with the reviewers (including the 95% "constructibility review"). Copies of review package are routed to both in-house functional branches and involved outside agencies.

<b>Guidance</b>	<b>RBS</b>
<i>Drafting and Plans Manual of Instruction, Article 4-1.2</i>	144
<i>Highway Design Manual (HDM), Chapter 100, Topic 110, Index 110.7</i>	168-171
<i>Plans, Specifications, and Estimates Guide, Section 2-3.02J</i>	220-279
<i>Project Development Procedures Manual (PDPM), Chapter 2-60, Article 20 &amp; Chapter 2-70, Section 30, Article 10</i>	285-295
	296-302
	308-310
	308-310
	312-315
	316
	317-321
	332-337
	340-344
	349
	365-379
	380-389
	390-396
	400-499
	510-515
	600-799

### Sub Tasks:

- Review Final Plans for Constructability
- Review Project for Final Permit Needs
- Review Aesthetics
- Review All Specifications and Estimate
- Review Geotechnical Design Elements and specifications
- Perform Safety Review
- Perform All Other PS&E Reviews

### End Product:

Collection and documentation resolution of all comments, so that the draft plans, specifications and estimate can be finalized.

## 255.10 Update PS&E Package

This activity includes all necessary updates as a result of the draft PS&E circulation or when headquarters Office of the Office Engineer (OOE) requires resubmittal of the final PS&E package from the district. This includes delineation support

### End Product:

Updated set of plans, specifications and estimate ready for final process review prior to being transmitted to Headquarters Office Engineer.

**255.10.05 Update Roadway PS&E***Guidance***RBS**

220-279

285-295

296-302

**255.10.10 Update Highway Planting PS&E***Guidance***RBS**

285-295

296-302

340-344

**255.10.15 Update Traffic PS&E***Guidance***RBS**

285-295

296-302

365-379

380-389

**255.10.20 Update Hydraulic PS&E***Guidance***RBS**

220-279

285-295

296-302

312-315

**255.10.25 Update Technical Reports**

Such as Geotechnical Report, Hydrology/Hydraulics Report, and Material Report

*Guidance***RBS**

168-171

220-279

**255.10.30 Update Utility PS&E***Guidance***RBS**

220-279

285-295

296-302

400-499

**255.10.35 Update Electrical PS&E***Guidance***RBS**

285-295

296-302

390-396

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**255.15 Perform Environmental Reevaluation**

This activity is initiated when changes have occurred during design that may increase the project foot print or increase the environmental impacts above that addressed in the final environmental document. This activity also includes updates required because EDs are only valid for three years. If a supplemental document is required the WBS activity 165 should be used.

*Note: FED's are only valid for three years, consequently this activity may be required more than once.*

**Guidance**

*Environmental Handbook (Manual) Vol. 1, Chapter 3, Section 3-8 & Chapter 4, Section 4-3  
Plans, Specifications, and Estimates Guide, Section 2-3  
Project Development Procedures Manual (PDPM), Chapter 2-70, Section 30, Article 20  
Traffic Noise Analysis Protocol, 1, 1.4.3*

**RBS**

168-171  
168-171  
220-279  
220-279  
332-337

**Sub-tasks:**

- Technical studies that may be required to assess the new impacts. This would include but not limited to: biological, archaeological, visual and noise studies.
- Drafting review and approval of the reevaluation.

**End Product:**

An approved Environmental Reevaluation for the final PS&E package or a determination that no Reevaluation is required.

**255.20 Prepare Final District PS&E Package**

This activity includes all the tasks required to complete the process requirements (such as the reproduction, funds request and Attachment A). Also includes OE effort to ensure the completeness, quality, and consistency of PS&E's submitted to the headquarters Office of Office Engineer (OOE) for processing. The DOE verifies that the design is complete, bid-able, and build-able.

**End Product:**

Final District PS&E Package (Submitted to the Office of Office Engineer).

**255.20.05 Review Plans for Drafting Standards Compliance**

This includes the delineation effort required to address any review comments.

**Guidance****RBS**

220-279  
285-295  
296-302

**255.20.10 Incorporate Final Structures Specifications and Estimate into Final District PS&E****Guidance**

*Plans, Specifications, and Estimates Guide, Sections 2-3  
Project Development Procedures Manual (PDPM), Chapter 2-70, Section 30, Article 40*

**RBS**

285-295  
296-302

**255.20.15 Prepare Request for Funds****Guidance**

*Plans, Specifications, and Estimates Guide, Sections 2-3.02S  
Project Development Procedures Manual (PDPM), Chapter 3-50, Section 30, Article 70*

**RBS**

105-139  
220-279

**255.25 Prepare Geotechnical Information Handout**

This activity includes reviewing the Geotechnical Design Report (GDR) that was prepared earlier during the design phase and selecting the necessary sections to be included in the Geotechnical Information Handout. The GDR includes information such as existing physical setting, geophysical studies, geotechnical conditions, geotechnical analysis and design, construction considerations, and recommendations and specifications.

**Guidance****RBS**

316  
322-325

**Sub-tasks:**

None Identified

**End Product:**

Completion of the Geotechnical Information Handout, and making it available for the prospective bidders to review.

**255.30 Prepare Materials Information Handout**

The Materials Information Handout (MIH) is prepared for the use of prospective bidders. The handout includes test data on local materials sources, soil survey sheets showing borings, tests, and seismic information (if required). It also includes a statement that the non-commercial borrow, disposal, or material sites conform with regulations and environmental laws.

**Guidance**

*Highway Design Manual (HDM), Chapter 100, Topic 111, Index 111.3*

*Plans, Specifications, and Estimates Guide, Sections 2-3.02P*

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 60*

**RBS**

317-321

**Sub-tasks:**

- Transmit project strip map and proposed typical cross sections to the Materials Unit requesting available materials information for the project.
- Request the Materials Unit to prepare a Materials Information Handout.
- Material Unit prepares MIH and sends to Project Engineer.

**End Product:**

Completion of the Material Information Handout, and making it available for the prospective bidders to review.



# 260 Prepare Contract Documents

Work involved in the preparation of contract bid documents. Completion of this activity is the milestone "Ready to List"

## 260.10 Produce Check Prints

Process, plot and distribute check prints for PS&E review and processing of draft contract documents.

*Note: This activity is most often charged with EA 910686, and is generally not scheduled and resourced on a project specific basis.*

### Guidance

CADD Users Manual

Plans, Specifications, and Estimates Guide, Section 2-3.01, Page 2-4 & Appendix 2F, Page 2-41

### RBS

285-295

296-302

296-302

### Sub-Tasks:

- Log plans in
- Plot required number of plan sets
- Evaluate plans for conformance to drafting standards.
- Distribute check plots to Plans Bin, FHWA and others as appropriate.

### End Product:

Check prints

## 260.15 Prepare Draft Contract Documents

This Activity includes all engineering work performed by the Office of Office Engineer (OOE) to prepare and process draft District PS&E submittals to draft contract (PS&E Ready). This activity also includes the effort that districts or structures require to respond to OOE comments. When districts or structures are required to resubmit the PS&E, that effort should be captured under WBS activity 255.10 or 250.10 respectively.

### End Product:

Draft Contract, Ready to List (provided that all advertising constraints, such as permits, agreements, and right of way certification are cleared and received by the OOE).

### 260.15.05 Verify PS&E is Complete and Conforms to Policies & Standards

This Activity includes engineering work performed by the OOE to prepare and process draft District PS&E submittal (includes Structures PS&E) into draft contract in conformance with Caltrans and/or FHWA policies, standards and applicable laws and regulations.

### Guidance

Asphalt Price Index

Caltrans Standard Plans

Director's Policy Directives on Informal Contracts Procedure

Federal Wage Rate Source by Internet Subscription Only (Password Protected)

Interim A+B Contract Policy and Guidelines

Plans, Specifications, and Estimates Guide, Sections 1 through 5

Policy on High & Low Risk Underground Facilities, Sections 1 through 6

Prevailing State Wage Rates, Division 1, Chapter 8, Subchapter 3, Articles 1-4

Project Development Procedures Manual (PDPM), Chapter 2-70, Section 30, Article 40

Public Contract Code, Sections 100-1101, 3400, 10100-10109, & 10120-10128

Standard Special Provisions (SSPs)

Standard Specifications, Sections 10 through 95

### RBS

285-295

285-295

296-302

308-310

### Sub-Tasks:

- Verify the plans are complete and conform to Caltrans standards and policy.

- Verify contract special provisions cover all items of work and other contract terms in accordance with Caltrans and/or FHWA standards and applicable laws and regulations.
- Verify Engineer's Estimate is consistent with the plans and special provisions and that there is a method of payment for all contract work either by contract item or some other means (e.g. included in other items of work, extra work, etc.)
- Develop a punch list of non-conforming and unresolved issues and forward to District/Structures for resolution.

**End Product:**

Draft contract

**260.15.10 Incorporate District Revisions**

This activity includes engineering work required to be performed by the District and/or Structures to resolve issues and make revisions as requested by OOE in Activity 260.15.05. It also includes effort by OOE to update draft contract documents and to incorporate revisions submitted by the District /Structures.

**Guidance**

*Plans, Specifications, and Estimates Guide, Sections 1-2.03 through 1-2.04*

**RBS**

220-279

285-295

285-295

296-302

312-315

316

340-344

380-389

390-396

**Sub-Tasks:**

- Resolve issues and make revisions to PS&E.
- Verify that all requested information has been provided by the District /Structures.
- Verify that District /Structures revisions are in accordance with Caltrans and/or FHWA standards and applicable laws and regulations.
- Verify that District /Structures revisions are not in conflict with other portions of the PS&E.
- Update draft contract to incorporate revisions.
- Verify FHWA comments have been appropriately addressed.

**End Product:**

Draft contract, Ready to List (assuming all advertising constraints, such as permits, agreements, and right of way certification are cleared and received by the OOE).

# 265 Advertise, Open Bids, Award and Approve Contract

Work involved in the advertisement, bid opening, award, and approval of a construction

## 265.05 Prepare Project for Advertising 265.05

This Activity includes all work required to prepare final contract plans, specifications and estimates for advertisement.

*Note: This Activity is charged to a specific project EA, and to EA 910686. The effort charged to 910686 is generally not scheduled and resourced on a project specific basis.*

### End Product:

Final Contract Bid Documents

### 265.05.05 Schedule Project for Advertising

Involves all work in identifying projects which are Ready To List (RTL) and have funding to be advertised and scheduling them for advertising.

#### Guidance

*Plans, Specifications, and Estimates Guide, Section 1-2.05, Pages 1-7 & 1-8, & Section 1-5, Pages 1-25 through 1-39*

#### RBS

285-295

### Sub-Tasks:

- Prepare tentative advertisement list of projects
- Distribute the above list to other units for their input and concurrence
- Finalize advertisement list and set bid opening dates
- Produce ads for bids and advertisement list
- Set target milestone to be met by other units prior to advertisement

### End Product:

- Advertising schedules
- Milestone deadlines
- Advertisements for bids

### 265.05.10 Final Plan Preparation

This Activity includes work required to prepare final contract plans for advertisement and certify the final Engineer's Estimate and total PS&E estimate.

#### Guidance

*Contract Item Cost Data Summary  
Final Project Preparation Guide*

#### RBS

285-295

### Sub-Tasks:

- Verify inclusion of latest SSPs, RSPs, and NSPs.
- Set final plan sheet order and index
- Complete and prepare draft redline contract plans for delineation
- Verify that redline plans have been completely and accurately delineated
- Verify all items of work have a method of payment
- Verify that funds have been identified for all contract costs
- Certify final Engineer's Estimate

### End Product:

Final Contract Plans

**265.05.15 Update Contract Documents**

Final contract preparation activities to incorporate latest standards, DBE goals, project scheduling information and address comments developed during final plan preparation process.

**Guidance**

*Standard Items and Codes*

**RBS**

285-295

**Sub-Tasks:**

None identified.

**End Product:**

Final Contract documents ready for typing

**265.05.20 Develop DVBE/DBE Match List and Set Goals**

This Activity includes all work associated with analyzing contract work and setting DVBE or DBE project participation goals for Caltrans construction contracts.

*Note: This activity is charged to EA 910686.*

**Guidance**

*Civil Rights Program (Goals), Website*

*Construction Manual, Chapter 9, Section 9-03, Page 9-03-1*

*FHWA Title 49 Federal Regulations, Part 23, Pages 222-263*

*Public Contract Code, Sections 10115-10115.10, 14838-14838.6, & 999-999.9*

*Streets and Highways Code, Sections 94.3, & 94.4*

**RBS**

285-295

**Sub-Tasks:**

- Compare the items of work and materials that can be handled by available DVBE or DBE firms in the vicinity of the project and develop match list.
- Determine items of work and materials that will most likely be performed by the prime contractor.
- Estimate the percentage of work available that DVBE or DBE can perform
- Set project participation goals based on analysis.

**End Product:**

DVBE/DBE goals

**265.05.25 Perform Fund Analysis and Finalize BEES**

This activity includes updating the BEES and performing analysis of funding requirements for project.

*Note: This activity is charged to EA 910686.*

**Guidance**

*Plans, Specifications, and Estimates Guide, Appendices 2C, Page 2-38 & 2K, Page 2-49*

**RBS**

285-295

**Sub-Tasks:**

- Update the BEES to reflect redline changes in engineer's estimate.
- Initialize the bid opening system.
- Distribute the Final Estimate of Cost.
- Analyze the funding requirements for project.
- Setup the phase 4 EA

**End Product:**

- Final Estimate of Contract Cost
- Phase 4 EA
- Funding analysis work sheet

**265.05.30 Prepare Final Specifications and Proposal and Contract Documents**

This activity includes all work required to produce the final electronic (typed) contract Special Provisions and Proposal and Contract books ready for reproduction.

*Note: This activity is charged to a specific project EA*

**Guidance**

*Plans, Specifications, and Estimates Guide, Section 1-2.06, Pages 1-8 & 1-9*

**RBS**

285-295

**Sub-Tasks:**

- Incorporate contract boilerplate
- Generate and incorporate electronic Engineer's Estimate
- Scan and incorporate Engineer's seals
- Merge project data
- Format for reproduction

**End Product:**

Contract bid document which consists of contract Special Provisions and Contract & Proposal Books

**265.05.35 Delineate Plans**

Perform final drafting work on project plans to incorporate agreed upon changes and updating prior to final plotting and preparation for advertisement distribution printing.

*Note: This activity is charged to a specific project EA*

**Guidance**

*Drafting and Plans Manual of Instruction, Chapters 1 & 2*

**RBS**

296-302

**Sub-Tasks:**

- Maintain OE Database of project inventory through login and logout records.
- Import electronic plan files or retrieve hard copy plans.
- Scan and vectorize hard copy plans to create electronic file.
- Draft redline changes as directed by engineering staff.
- Plot final electronic files.
- Check final drafted changes prior to final printing.
- Send to Reprographics.

**End Product:**

Final approved project plans

**265.05.40 Reproduce Contract Documents**

Compile final contract Special Provisions and Proposal and Contract book, Materials Information handouts, and contract plans; develop reproduction orders and submit to Reprographics for publication.

*Note: This work is charged to a specific project EA*

**Guidance**

*Drafting and Plans Manual of Instruction, Chapters 5 & 6*

**RBS**

285-295  
296-302

**Sub-Tasks:**

None identified.

**End Product:**

Contract Documents for bidders to pick up.

## 265.10 Advertise Project

This activity consists of advertising projects which are Ready To List (RTL) and are funded, in the State Contract Register, community newspapers and construction trade publications.

*Note: The work involved in this activity is charged to EA 910686, and is generally not resourced on a project specific basis.*

### Guidance

Construction Manual, Chapter 2, Section 2-02, Page 2-02-1

Public Contract Code, Sections 10140-10141, & 14825-14829.2

### RBS

280-284

285-295

### Sub-Tasks:

None identified.

### End Product:

Advertisement in the State Contract Register, Newspapers and Trades publications

## 265.15 Distribute Bid Documents

This activity involves storing, managing and distributing Contract & Proposal books, Special Provisions books, Contract plans, material information handout, geotechnical information handout, bidders lists and permits for advertised highway construction projects.

*Note: This Activity is charged to EA 910686, and is generally not resourced on a project specific basis.*

### Guidance

Caltrans Weekly Advertisement for Bids, Website

### RBS

285-295

### Sub-Tasks:

None identified.

### End Product:

- Distribution of Bid Documents.
- Bidders Lists

## 265.20 Develop and Issue Addenda

This activity involves developing, publishing and issuing addenda to advertised projects.

*Note: This Activity is charged to the project EA and/or EA 910686, and will generally not be scheduled or resourced.*

### Guidance

Addenda Preparation Procedures

Plans, Specifications, and Estimates Guide, Section 1-2.06; Section 1-2.07, Pages 1-9 through 1-18; Appendix 1B, Page 1-43; & Appendix 1D, Page 1-45

Project Development Procedures Manual (PDPM), Chapter 2-80, Section 10

### RBS

220-279

285-295

296-302

### Sub-Tasks:

- Develop addenda (develop revised contract special provisions, Engineer's Estimate and red line plan sheet corrections). This includes all effort including district and ESC effort.
- Delineate line plan sheet corrections for addendum
- Publish and reproduce addendum
- Distribute addendum to all bidders, non-bidders, clearing houses, builders exchanges, Districts, Functional Programs, FHWA and other involved parties. OSD design sections or all those who "sealed" plans need to be included in distribution list.
- Verify receipt of addenda by all bidders
- Post addenda in undistributed contract documents

### End Product:

Changes required in bid documents in final form.

## 265.25 Respond to Inquiries & Open Bids

This activity includes all work associated with opening, reading, recording and verifying bids on Caltrans Construction contracts, as well as disseminating bid results to the Department and the public. Work to respond to bidders inquiries after advertisement is included in this activity.

*Note: HQ OOE effort is charged to EA 910686, but is generally not resourced.*

<b>Guidance</b>	<b>RBS</b>
Construction Manual, Chapter 2, Section 2-02, Page 2-02-1 & Section 2-03, Page 2-03-1 & 2-03-2	280-284
Plans, Specifications, and Estimates Guide, Section 1-2.07 & Section 1-2.08, Pages 1-13 through 1-16	285-295
Project Development Procedures Manual (PDPM), Chapter 2-80, Section 10	510-515
Standard Specifications, Section 2, Pages 2-1 through 2-6	

### Sub-Tasks:

- Opening bids at public bid opening, recording bid results and cursory check for responsiveness and completeness of bid.
- Reading and recording of bids
- Entry of bid data into Caltrans Bid Opening System to verify each bid and to store bid data on computer.
- Respond to Bidder Inquiries.
- Produce bid summary information and distribute to bidders and Districts.

### End Product:

- Opened bids
- Disseminated bid information

## 265.30 Award Contract

This activity includes all contract award-related work.

*Note: Work for this activity is charged to the project specific EA or EA 910686 and is generally not resourced.*

### End Product:

Contract Award Packages

### 265.30.05 DVBE/DBE Goal Evaluation, Good Faith Effort, and Hearings

This work is related to the Department's disadvantage and disabled veteran business enterprise program.

*Note: This activity is charged to specific project EA (Hearings) or EA 910686.*

<b>Guidance</b>	<b>RBS</b>
Construction Manual, Chapter 9, Section 9-03, Page 9-03-1	280-284
FHWA Title 49 Federal Regulations, Part 23, Pages 222-263	285-295
Public Contract Code, Sections 10115-10115.10, 14838-14838.6, & 999-999.9	
Streets and Highways Code, Sections 94.3 & 94.4	

### Sub-Tasks:

- Receive contractor DVBE/DBE submittals and forward to BEP for evaluation.
- Maintain database of goal commitment at contract award and produce monthly reports summarizing achievements on project.
- Produce quarterly 1405 (Federal) and 810 (State) achievement reports for construction contract and forward to BEP.
- Notify contractor when BEP has determined that a good faith effort was not made and arrange appeal meetings for "no good faith efforts".
- Chair Department's Good Faith Effort Appeal Committee and provide staff to the Committee.
- Prepare Appeal Committee findings for signature by the Deputy Director, Project Development.

- Notify contractor of results of the good faith meeting, and maintain files and electronic database of appeal outcome.

**End Product:**

Completed DVBE/DBE goal evaluation

**265.30.10 Resolve Bid Award Issues and Hearings**

This work consists of addressing bid relief requests, subcontractor substitution requests, protests by contractors, and holding responsibility hearings.

*Note: This activity is to specific project EA (Hearings) or EA 910686, and is generally not resource loaded.*

**Guidance**

California Admitted Sureties, Website  
 Contract State License Board, Website  
 Public Contract Code, Sections 4100-5107 & 10160-10169

**RBS**

067-069  
 280-284  
 285-295

**Sub-Tasks:**

- Analyze requests for relief of bid or subcontractor substitution and make determinations based on State Contract Act.
- Analyze protests and respond appropriately.
- Arrange for protest meetings or responsibility hearings if necessary.
- Prepare reports for committee recommendations.
- Provide response to contractor.
- Maintain records of issues.

**End Product:**

Award issues resolved.

**265.30.15 Prepare, Process, and Award Contract**

This activity includes all routine contract award-related work.

*Note: Work for this activity is charged to EA 910686 and is generally not resource loaded.*

**Guidance**

Construction Manual, Section 2-03  
 Construction Manual, Chapter 2, Section 2-03, Pages 2-03-1 & 2-03-2  
 Plans, Specifications, and Estimates Guide, Section 1-2.07  
 Project Development Procedures Manual (PDPM), Chapter 2-80, Section 10  
 Public Contract Code, Sections 3300, 6100-9202, & 10180-10285.5  
 Standard Specifications, Section 3, Pages 3-1 & 3-2

**RBS**

280-284  
 285-295

**Sub-Tasks:**

- Perform license, small business certification, bid bond checks
- Process G-11/G-12; perform fund analysis, obtain EA certification
- Assemble award packages and award contracts
- Recommend award of contract
- Award contract

**End Product:**

Awarded Contracts



## 265.35 Execute and Approve Contract

This activity includes all work associated with the execution of awarded contracts and the approval of those contracts.

*Note: Work performed for this activity is charged to EA 910686. and is generally not resource loaded.*

### Guidance

*Construction Manual, Section 2-03*

*Construction Manual, Chapter 2, Section 2-03, Pages 2-03-2*

*Project Development Procedures Manual (PDPM), Chapter 2-80, Section 10*

*Public Contract Code, Section 10220*

*Standard Specifications, Section 3, Pages 3-1 & 3-2*

### RBS

280-284

285-295

### Sub-Tasks:

- Contract award package shipped to contractor.
- Award summary information distributed to District.
- Contractor signs contract, attaches payment and performance bonds and returns executed contract.
- Office Engineer receives executed contract, checks to determine if properly executed.
- Office Engineer signs contract
- Legal signs contract - contract is approved
- Process forfeiture of bid if contractor fails to execute contract.

### End Product:

Approved Contract



# 270 Perform Construction Engineering and General Contract Administration

Work involved in field engineering, construction surveys, inspection of contractors' operations, sampling and testing of materials, and general construction contract administration. The end product of this activity is the recommendation for Contract Acceptance by the Resident Engineer

## 270.05 Prepare Resident Engineer's File

Work involved in preparing the District RE File / Structures R.E. Pending File. Includes contacts with construction to transmit the file and determine what additional information may be required. Includes preparing and forwarding additional information (such as cross sections/as-builts/slope staking notes/grid grades/structures 4-scales) as requested by construction.

### Guidance

*Construction Manual, 3, 0, 1*

*Project Development Procedures Manual (PDPM), Chapter 2-80, Section 20*

### RBS

220-279

510-515

### Sub-tasks:

None identified.

### End Product:

District RE File and Structures R.E. Pending File forwarded to construction/surveys.

## 270.10 Prepare Staking Notes

Effort in developing construction Staking Notes and construction Staking Electronic Data Files from design information.

### Guidance

*Construction Manual, 2, 5*

*Project Development Procedures Manual (PDPM), Chapter 1-30, Section 30 & Chapter 2-80, Section 20*

*Surveys Manual*

### RBS

220-279

308-310

### Sub-tasks:

None identified.

### End product:

- Construction Staking Notes
- Construction Staking Electronic Data Files

## 270.15 Perform Construction Staking

Construction staking operations performed at the construction project site. Surveys time reviewing the survey staking request, traveling to the construction project, performing the staking and all staking related survey operations.

### End product:

- Construction staking to control planned lines and grades
- Notes resulting from construction staking

### 270.15.10 Perform Re-Staking

#### Guidance

*Construction Manual, 2, 5*

*Staking Information*

*Surveys Manual*

#### RBS

308-310

**270.15.15 Perform Slope Staking****Guidance**

*Construction Manual*  
*Prevailing State Wage Rates*  
*Staking Information*  
*Surveys Manual*

**RBS**

308-310

**270.15.20 Perform Fence Staking****Guidance**

*Construction Manual*  
*Prevailing State Wage Rates*  
*Staking Information*  
*Surveys Manual*

**RBS**

308-310

**270.15.25 Perform Rough Grade Staking****Guidance**

*Construction Manual, 2, 5*  
*Prevailing State Wage Rates*  
*Staking Information*  
*Surveys Manual*

**RBS**

308-310

**270.15.30 Perform Finish Grade Staking****Guidance**

*Construction Manual*  
*Prevailing State Wage Rates*  
*Staking Information*  
*Surveys Manual*

**RBS**

308-310

**270.15.35 Perform Drainage and Minor Structure Staking****Guidance**

*Construction Manual*  
*Prevailing State Wage Rates*  
*Staking Information*  
*Surveys Manual*

**RBS**

308-310

**270.15.40 Perform Utility Staking****Guidance**

*Construction Manual, 2, 8*  
*Prevailing State Wage Rates*  
*Staking Information*  
*Surveys Manual*

**RBS**

308-310

**270.15.45 Perform Major Structure Staking****Guidance**

*Construction Manual*  
*Prevailing State Wage Rates*  
*Staking Information*  
*Surveys Manual*

**RBS**

**270.15.50 Perform Miscellaneous Staking****Guidance**

*Construction Manual, 2, 5*  
*Prevailing State Wage Rates*  
*Staking Information*  
*Surveys Manual*

**RBS**

308-310

**270.15.55 Perform Construction Photogrammetry**

Includes preparing mapping request, flight line and control distribution planning, pre-marking control survey, aero-triangulation, contract administration, 3-D compilation, map assembly, data conversion, quality control and digital modeling, or other products as specifically requested by Construction.

**Guidance**

*Construction Manual*  
*Prevailing State Wage Rates*  
*Surveys Manual*  
*User's Guide to Photogrammetric Services*

**RBS**

311

**270.20 Perform Construction Engineering Work**

All work involved in the conduct of construction engineering work for the construction contract. See detail activities at Level 8 below.

A summary Sub-task is added at Level 7 and coded as 270.20.xx, that contain product(s) of construction engineering work for individual construction periods, if applicable. Use the pseudo-task 270.20.95 in accordance with the section “Rules for usage of the WBS”, sub-section “Pseudo Activities” on page 11 of this Guide for a group of miscellaneous activities that do not need to be planned, resourced, and tracked by individual construction periods.

**End Product:**

The end of this product coincides with the end of field construction work.

**270.20.xx Perform Construction Engineering Work for Construction Period xx**

All work involved in the conduct of construction engineering work for the construction contract in the construction Period No. xx. Provides for planning and resourcing project construction engineering work “by construction period” if applicable.

*Note: Where xx is the construction periods, e.g. 270.20.01 for construction period No.1, 270.20.02 for construction period No.2, and so on.*

**270.20.xx.05 Review Resident Engineer's File**

Includes Structures R.E. Pending File.

**Guidance**

*Construction Manual*  
*Prevailing State Wage Rates*

**RBS**

516-584

**270.20.xx.10 Review Project Plans, Special Provisions, and Estimate****Guidance**

*Construction Manual*  
*Prevailing State Wage Rates*

**RBS**

510-515

516-584

**270.20.xx.15 Determine Contract Pay Quantities**

Work involved in measuring and calculating the contract item pay quantities for the construction project. Includes preparation of payment sheets to be used for quantity sheets.

**Guidance**

*Construction Manual, 3, 0*  
*Prevailing State Wage Rates*

**RBS**

516-584

**270.20.xx.20 Determine Lines and Grades Control**

Using the field survey stakes and notes from Surveys, the construction field engineering staff determines and lays out all additional lines and grades necessary to construct/ erect/ place a particular structure (or portion of a structure) or portion of the roadway work.

**Guidance**

*Construction Manual*  
*Prevailing State Wage Rates*

**RBS**

516-584

**270.20.xx.25 Review Contractors' Falsework Submittals**

Structure construction field engineering staff's review and approval of the Contractor's falsework submittals for design adequacy, construct-ability, contract compliance, and completeness.

**Guidance**

*Construction Manual, 2, 7*  
*Prevailing State Wage Rates*  
*Falsework*  
*Bridge Construction Records and Procedures, Sections 3,*

**RBS**

510-515  
 516-584

**270.20.xx.30 Review Contractors' Trenching and Shoring Submittals**

Structure construction field engineering staff's review and approval of the Contractor's Trenching & Shoring submittals for design adequacy, construct-ability, contract compliance, and completeness.

**Guidance**

*Construction Manual, 6, 19*  
*Prevailing State Wage Rates*  
*Trenching and Shoring*  
*Bridge Construction Records and Procedures, Section 3*

**RBS**

510-515  
 516-584

**270.20.xx.35 Review Shop Plans**

Includes review and approval by construction and non-construction staff, of Shop Plans/Working drawing for contract compliance.

**Guidance**

*Construction Manual*  
*Prevailing State Wage Rates*

**RBS**

516-584

**270.20.xx.40 Review Cost Reduction Incentive Proposals (CRIPS)**

Review and approval for design adequacy, construct-ability, contract compliance, estimate of cost savings, any necessary specification changes or additions, etc. of a Contractor's submitted CRIP. Development of the CCO for an approved CRIP is included in WBS 285.

**Guidance**

*Construction Manual, 2, 50*  
*Prevailing State Wage Rates*

**RBS**

500-509  
 510-515  
 516-584

**270.20.xx.45 Review Contractors' Water Pollution Control Program**

Review and approval for contract compliance and adequacy for the particular construction project site.

**Guidance**

*Construction Manual, 6, 16*  
*Prevailing State Wage Rates*

**RBS**

516-584

**270.20.xx.50 Provide Technical Support**

Technical Support for the construction engineering staff provided by personnel other than construction staff, providing support to construction engineering activities. Includes Design, Traffic, Hydraulics, Materials, ESC/Structures, Structures Foundation, Environmental, Landscape Architect, Right of Way Engineering, Maintenance and other specialty staff.

**Guidance**

*Construction Manual*  
*Prevailing State Wage Rates*

**RBS**

168-171  
 220-279  
 308-310  
 312-315  
 316  
 317-321  
 322-325  
 332-337  
 340-344  
 365-379  
 380-389  
 390-396  
 397-399  
 400-499  
 600-799

**270.25 Perform Construction Contract Administration Work**

All work involved in the conduct of contract administration work for the construction contract. See detail activities at Level 8 below.

A summary Sub-task is added at Level 7 and coded as 270.25.xx, that contain product(s) of contract administration work for individual construction periods, if applicable. Use the pseudo-task 270.25.95 in accordance with the section "Rules for usage of the WBS", sub-section "Pseudo Activities" on page 11 of this Guide for a group of miscellaneous activities that do not need to be planned, resourced, and tracked by individual construction periods.

**End product:**

All administration, record keeping and filing are complete for the construction project up through final estimate.

**270.25.xx Perform Construction Contract Administration Work for Construction Period xx**

All work involved in the conduct of contract administration work for the construction contract in the construction Period No. xx. Provides for planning and resourcing project construction contract administration work "by construction period" if applicable.

*Note: Where xx is the construction periods, e.g. 270.25.01 for construction period No.1, 270.25.02 for construction period No.2, and so on.*

**270.25.xx.05 Secure Lease for Resident Engineer Office Space or Trailer****Guidance**

*Construction Manual, 1, 40*  
*Prevailing State Wage Rates*

**RBS**

510-515

**270.25.xx.10 Set Up Construction Project Files**

Involves the initial work to develop the contract administration files.

**Guidance**

*Construction Manual, 3, 1*  
*Prevailing State Wage Rates*

**RBS**

516-584

**270.25.xx.15 Conduct Pre-construction Meeting**

Includes meeting after Pre-Construction meeting to establish Partnering Agreement, and the use of a Dispute Review Board (DRB).

**Guidance**

*Construction Manual, 1, 10*  
*Prevailing State Wage Rates*

**RBS**

500-509  
 510-515  
 516-584

**270.25.xx.20 Prepare Progress Pay Estimates****Guidance**

*Construction Manual, 3, 2*  
*Prevailing State Wage Rates*  
*Bridge Construction Records and Procedures, Sections 3, 4, 5, 6, and 130*

**RBS**

516-584

**270.25.xx.25 Prepare Weekly Statement of Working Days****Guidance**

*Construction Manual, 2, 8*  
*Prevailing State Wage Rates*

**RBS**

516-584

**270.25.xx.30 Maintain Construction Project Files and General Field Office Clerical Work****Guidance**

*Construction Manual, 3, 2*  
*Prevailing State Wage Rates*  
*Bridge Construction Records and Procedures, Sections 4, 5*

**RBS**

516-584

**270.25.xx.35 Perform Labor Compliance Activities****Guidance**

*Construction Manual, 9, all*  
*Prevailing State Wage Rates*

**RBS**

595-598

**270.25.xx.40 Approve Subcontractor Substitutions****Guidance**

*Construction Manual, 2, 8*  
*Prevailing State Wage Rates*

**RBS**

516-584

**270.25.xx.45 Coordination**

Includes contact with Local agencies and others. Also includes management of the COZEEP agreement/contract.

**Guidance**

*Construction Manual, 2, 7*  
*Prevailing State Wage Rates*  
*Bridge Construction Records and Procedures, Section 8*

**RBS**

516-584



## 270.30 Inspect Contract Item Work

All work involved in the conduct of inspecting contract item work for the construction contract. See detail activities at Level 8 below. Includes inspection of CCO work.

A summary Sub-task is added at Level 7 and coded as 270.30.xx, that contain product(s) of inspecting contract item work for individual construction periods, if applicable. Use the pseudo-task 270.30.95 in accordance with the section “Rules for usage of the WBS”, sub-section “Pseudo Activities” on page 11 of this Guide for a group of miscellaneous activities that do not need to be planned, resourced, and tracked by individual construction periods.

### End Product:

Project is in compliance with the Project Plans and Specifications. Construction inspection is complete for the construction project.

## 270.30.xx Inspect Contract Item Work for Construction Period xx

All work involved in the conduct of inspecting contract item work for the construction contract in the construction Period No. xx. Provides for planning and resourcing project inspection work “by construction period” if applicable.

*Note: Where xx is the construction periods, e.g. 270.30.01 for construction period No.1, 270.30.02 for construction period No.2, and so on.*

### 270.30.xx.05 Photograph Jobsite and Contractors’ Operations

#### Guidance

Construction Manual  
Prevailing State Wage Rates

RBS

### 270.30.xx.10 Inspect Contractors' Work for Compliance

Includes inspection and monitoring of the contractor’s Storm Water Pollution Protection Plan (SWPPP) facilities.

#### Guidance

Construction Manual, 6  
Prevailing State Wage Rates  
Building Construction  
Foundation  
Concrete Technology  
Bridge Construction Records and Procedures, Sections 100, 105, 112, 115, 124, 125, 130, 132, 135, 140, 145, 155, 160-162, 165, 168, 170  
Bridge Deck Construction

RBS

516-584

### 270.30.xx.15 Review and Document Contractors' Operations Relative to Safety Requirements

#### Guidance

Construction Manual, 1, 60  
Prevailing State Wage Rates  
Bridge Construction Records and Procedures, Section 14

RBS

516-584

### 270.30.xx.20 Prepare Daily Diary of Contract Operations

#### Guidance

Construction Manual, 3, 1  
Prevailing State Wage Rates  
Bridge Construction Records and Procedures, Section 3

RBS

516-584

**270.30.xx.25 Prepare Punch List****Guidance**

Construction Manual  
Prevailing State Wage Rates

**RBS****270.35 Sample & Test Construction Material**

All work involved in the conduct of sampling and testing construction material for the construction contract. See detail activities at Level 8 below.

*Note: This section is subject to revision based on the pending specifications for Quality Control/Quality Assurance.*

A summary Sub-task is added at Level 7 and coded as 270.35.xx, that contain product(s) of sampling and testing of construction material for individual construction periods, if applicable. Use the pseudo-task 270.35.95 in accordance with the section “Rules for usage of the WBS”, sub-section “Pseudo Activities” on page 11 of this Guide for a group of miscellaneous activities that do not need to be planned, resourced, and tracked by individual construction periods.

**End Product:**

Item and method is in compliance with project specifications. All construction sampling and testing is complete for the construction project.

**270.35.xx Sample & Test Construction Material for Construction Period xx**

All work involved in the conduct of sampling and testing construction material for the construction contract in the construction Period No. xx. Provides for planning and resourcing project sampling and testing work “by construction period” if applicable.

*Note: Where xx is the construction periods, e.g. 270.35.01 for construction period No.1, 270.35.02 for construction period No.2, and so on.)*

**270.35.xx.05 Sample and Test Materials for Quality Assurance****Guidance**

Construction Manual, 8  
Prevailing State Wage Rates  
Bridge Construction Records and Procedures, Sections 3, 4, 112, 145, 155, 165 & 180

**RBS**

516-584  
585-589

**270.35.xx.10 Perform Plant Inspection for Quality Assurance****Guidance**

Construction Manual, 8, 2  
Prevailing State Wage Rates

**RBS**

585-589

**270.35.xx.15 Perform Independent Assurance Sampling and Testing****Guidance**

Construction Manual, 8, 1  
Prevailing State Wage Rates

**RBS**

585-589

**270.35.xx.20 Perform Source Inspection****Guidance**

Construction Manual, 8, 2  
Prevailing State Wage Rates

**RBS**

585-589

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**270.40 Perform Safety and Maintenance Reviews**

Reviews after the completion of construction at the project site (or for portions of the project) to ensure that all safety concerns/ requirements have been addressed and that the State Right-of-Way and all State roadway/structures/facilities within the defined project limits have been maintained by the Contractor (from beginning of construction through construction completion and contract acceptance) in accordance with the construction contract.

**Guidance**

*Construction Manual, 1, 60*  
*Prevailing State Wage Rates*

**RBS**

105-139  
 516-584  
 600-799

**Sub-tasks:**

None identified.

**End product:**

Field safety and maintenance review(s) completed.

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**270.45 Process Relief from Maintenance**

Work in processing Relief from Maintenance notice to Contractor after safety and maintenance reviews are complete and the site is in compliance.

**Guidance**

*Construction Manual, 2, 7*  
*Prevailing State Wage Rates*

**RBS**

105-139  
 516-584  
 600-799

**Sub-tasks:**

None identified

**End product:**

Written notice of Relief from Maintenance to the Contractor.

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**270.50 Prepare Certificate of Compliance with Environmental Mitigation Requirements**

In accordance with AB3180, a Certificate of Compliance with Environmental Mitigation Requirements is completed by the Resident Engineer in conjunction with the District Environmental Branch. It lists the environmental mitigation's that were agreed to in the Environmental Document and states the manner by which each was accomplished during construction and, if not, it must state why and what was done instead.

**Guidance**

*Construction Manual, 2, 5*  
*Prevailing State Wage Rates*

**RBS**

105-139  
 168-171  
 516-584

**Sub-tasks:**

None identified.

**End product:**

The Certificate of Compliance with Environmental Requirements when completed goes to the State Office of Planning & Research for review and filing.

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**270.55 Perform Final Inspection and Recommend Acceptance**

Work involved in the final inspection of construction project site after Contractor has done all punch list work, and if all contract work is satisfactory the Resident Engineer will recommend acceptance in writing.

**Guidance**

*Construction Manual, 2, 5*  
*Prevailing State Wage Rates*

**RBS**

105-139  
516-584  
600-799

**Sub-tasks:**

None identified.

**End product:**

Written Recommendation for Contract Acceptance by the Resident Engineer. The Resident Engineer is also to call, fax, etc. to the District Office and Contractor that same day for timely notification of last working day in the contract.

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**270.60 Administer Plant Establishment**

Work involved in plant establishment phase of a construction contract. Includes monitoring plant growth and irrigation system operation, and directing remedial work.

**Guidance**

*Construction Manual, 6, 20*  
*Prevailing State Wage Rates*

**RBS**

340-344  
516-584  
600-799

**Sub-tasks:**

None identified

**End product:**

Plant establishment is in compliance with the project plans and specifications.

# 285 Prepare and Administer Contract Change Orders

Work involved in preparation and administration of contract change orders.

## 285.05 Prepare and Process Contract Change Order (CCO)

Includes making the determination of need for a CCO, preparing the supporting information, any design, and the written CCO and Transmittal Memo. Also included is the reviewing and processing of the CCO by the construction engineering and office staff and by staff at the District Office and at Structures Construction and Sacramento HQ office. The field inspection of CCO work and the writing of CCO diaries are to be included in WBS activity 270.30, "Inspect Contract Item Work". This activity, WBS 285.05, includes CCOs required after resolution of any claims.

A summary Sub-task is added at Level 7 and coded as 285.05.xx, that contain product(s) of preparing and processing contract change orders for individual construction periods, if applicable. Use the pseudo-task 285.05.95 in accordance with the section "Rules for usage of the WBS", sub-section "Pseudo Activities" on page 11 of this Guide for a group of miscellaneous activities that do not need to be planned, resourced, and tracked by individual construction periods.

### End product:

Approved CCO's and processing payments

## 285.05.xx Prepare and Process Contract Change Order for Construction Period xx

All work involved in the conduct of preparing and processing contract change orders for the construction contract in the construction Period No. xx. Provides for planning and resourcing project CCO work "by construction period" if applicable.

*Note: Where xx is the construction periods, e.g. 285.05.01 for construction period No.1, 285.05.02 for construction period No.2, and so on.*

### 285.05.xx.05 Determine Need For CCO

Effort involved in making the determination of need for a CCO, doing field and plan review, discussing the issues with the Contractor, and/ or the District Construction Engineer, Structure Construction Area Supervisor, Structures Construction Sacramento HQ, and the District or Structures Design Engineers, Architects, & Geotechnical personnel.

#### Guidance

Construction Manual, 2, 50  
Prevailing State Wage Rates

#### RBS

105-139  
220-279  
500-509  
510-515  
516-584

### 285.05.xx.10 Design and Prepare Draft CCO

Work by construction staff involved in calculating and designing CCO, compiling, delineation, and writing CCO and Transmittal Memo. Effort by other functional areas should be accounted for under 285.10.

#### Guidance

Construction Manual, 2, 50  
Prevailing State Wage Rates

#### RBS

220-279  
510-515  
516-584

**285.05.xx.15 Process CCO for Approval****Guidance**

Construction Manual, 2, 50  
Prevailing State Wage Rates

**RBS**

105-139  
510-515  
516-584

**285.05.xx.20 Process Payments for CCO Work**

Work involved in reviewing and approving Contractor's Extra Work Bills, and compiling and documenting information for adjustment payments. Completing all documentation for CCO payments.

**Guidance**

Construction Manual, 2, 50  
Prevailing State Wage Rates

**RBS**

516-584

**285.10 Provide Functional Support**

Work involved in providing functional support (other than the construction engineering or office field staff, or project design engineer staff) to the Resident Engineer/ Structure Rep.

A summary Sub-task is added at Level 7 and coded as 285.10.xx, that contain product(s) of functional support in preparing and processing contract change orders for individual construction periods, if applicable. Use the pseudo-task 285.10.95 in accordance with the section "Rules for usage of the WBS", sub-section "Pseudo Activities" on page 11 of this Guide for a group of miscellaneous activities that do not need to be planned, resourced, and tracked by individual construction periods.

**End product:**

Necessary support information to complete the written CCO, the design, and any CCO drawings.

**285.10.xx Provide Functional Support for Construction Period xx**

All efforts by functional units in support of preparing and processing contract change orders for the construction contract in the construction Period No. xx. Provides for planning and resourcing functional support for CCO work "by construction period" if applicable.

*Note: Where xx is the construction periods, e.g. 285.10.01 for construction period No.1, 285.10.02 for construction period No.2, and so on.*

**285.10.xx.05 Perform Field Surveys for CCO**

This is work by the Surveys and R/W Engineering functional units to provide survey data, including mapping, required for CCO(s), and includes revisions to CCO(s). The construction field engineers efforts are a part of this activity only if they are performing field "survey" work. If the construction field engineers are determining lines and grades control for a CCO, their effort should be part of activity 270.20.20, "Determine Lines and Grades Control".

**Guidance**

Construction Manual  
Prevailing State Wage Rates

**RBS**

308-310

**285.10.xx.10 Staking for CCO**

Includes re-staking for CCO.

**Guidance**

Construction Manual, 2, 5  
Prevailing State Wage Rates

**RBS**

308-310

**285.10.xx.95 Provide “Other” Functional Support**

Technical Support to the construction engineering staff provided by personnel other than construction staff, providing support for the CCO. Includes Design, Traffic, Hydraulics, Materials, ESC/Structures, Structures Foundations, Environmental, Landscape Architect, Maintenance, Geotechnical, and other specialty staff.

**Guidance***Construction Manual**Prevailing State Wage Rates***RBS***144**168-171**220-279**285-295**296-302**308-310**312-315**316**317-321**322-325**332-337**340-344**349**365-379**380-389**390-396**400-499**510-515**600-799*





# 290 Resolve Contract Claims

Work involved in the documentation and resolution of contract claims.

## 290.05 Review and Analyze Notices of Potential Claims

Work involved in reviewing and determining accuracy and validity of Notice of Potential Claims (NOPC).

### Guidance

*Construction Manual, 2, 70*  
*Prevailing State Wage Rates*

### RBS

500-509  
510-515  
516-584

### Sub-Tasks:

None identified.

### End Product:

Determined response to claim.

## 290.10 Prepare Supporting Documentation and Respond to Notices of Potential Claims

### 290.10

Work involved in providing all backup data and copies of reports for the NOPC and responding to the Contractor. This activity also includes organizing and placing information in the project files.

### Guidance

*Construction Manual, 2, 70*  
*Prevailing State Wage Rates*

### RBS

516-584

### Sub-Tasks:

None identified.

### End Product:

Written response to claim. Also, a project file will exist for each NOPC that contains the backup data, the NOPC, and the State's response. A positive response will result in a CCO being prepared (see WBS 285).

## 290.15 Prepare, Review, and Approve Claim Report

Work at the completion of the construction project due to claims submitted by the Contractor regarding disputes during the course of construction for which the Contractor submitted written notices or protests that were rejected by the Resident Engineer while construction was still in progress. Work in compiling all information for the claim report, requesting additional information from the Contractor when required, and reviewing the claim report.

### Guidance

*Construction Manual, 2, 70*  
*Prevailing State Wage Rates*

### RBS

500-509  
510-515  
516-584

### Sub-Tasks:

None identified.

### End Product:

Either 1 or 2 below:

1. Claim approved by Resident Engineer with letter to Contractor stating the resolution of claim, and that CCO will be written to cover work noted in claim (writing, processing, and administering the CCO would be charged to one of the level 6 or level 7 activities under WBS Act. 285 "Prepare and Administer Contract Change Orders").

2. Claim rejected by Resident Engineer with letter to Contractor stating rejection and stating the Contractor's option if he wanted to pursue the claim further (i.e., District Claim Meeting/ Board of Review).

---

## 290.20 Conduct District Claim Meeting or Board of Review

Work involved in preparing, conducting, and documenting the District Claim Meeting or Board of Review. This work would be as a result of the Contractor pursuing a claim further after it has been rejected by the Resident Engineer after completion of the construction project.

### Guidance

*Construction Manual, 2, 70*  
*Prevailing State Wage Rates*

### RBS

067-069  
 500-509  
 590-594

### Sub-Tasks:

None identified.

### End Product:

Written notice of claim finding.

---

## 290.25 Prepare for and Participate in Arbitration Hearing

Work involved in preparing for, participating in, and documenting the arbitration hearing. This activity could also include a Resident Engineer's/ Structure Rep's work involved in reopening the project EA if required. Includes appearing as expert witness.

### Guidance

*Construction Manual, 2, 70*  
*Prevailing State Wage Rates*

### RBS

067-069  
 500-509  
 516-584  
 590-594

### Sub-Tasks:

None identified.

### End Product:

- An arbitration decision.
- Payment, if any, that has been authorized by the arbitration decision is made to the Contractor
- Closure of project EA.

---

## 290.30 Negotiate Claim Settlement

Negotiate claim settlement prior to the District Claim meeting or Board of Review. Includes providing documentation for project files. CCOs required because of settlement should be captured under WBS 285 (CCOs).

### Guidance

*Construction Manual, 2, 70*  
*Prevailing State Wage Rates*

### RBS

067-069  
 500-509  
 516-584  
 590-594

### Sub-Tasks:

None identified.

### End Product:

Claim settlement or determination to go to Board of Review/District Claim Meeting.

---

## 290.35 Provide Technical Support

All work necessary to provide back-up data, information to Claim's staff in their analysis, negotiation, resolution of construction claims, its settlement and disposition throughout the

claims process including the District Claim meeting or Board of Review. Includes providing documentation for project files. Any support given for CCOs required in settlement should be captured under WBS 285 (CCOs). Includes Design, Traffic, Hydraulics, Materials, ESC/Structures, Structures Foundation, Environmental, Landscape Architect, Maintenance and other specialty staff.

**Guidance**

*Construction Manual, 2, 70*  
*Prevailing State Wage Rates*  
*Surveys Manual*

**RBS**

144  
 168-171  
 220-279  
 285-295  
 296-302  
 308-310  
 312-315  
 316  
 317-321  
 322-325  
 332-337  
 340-344  
 349  
 365-379  
 380-389  
 390-396  
 400-499  
 510-515  
 516-584  
 600-799

**Sub-Tasks:**

None Identified.

**End product:**

Claim settlement.



# 295 Accept Contract, Prepare Final Construction Estimate, and Prepare Final Report

Work involved in the acceptance and final documentation of a construction contract.

## 295.05 Process Estimate After Acceptance

The work involved in preparing payment documents for processing the After Acceptance (AA) Estimate (the last "monthly progress" estimate) after the Resident Engineer has recommended acceptance and the District Director has given acceptance. Processing the After Acceptance Estimate includes processing the estimate by District Office staff, the review and approval of the Automated Progress Pay Estimate by the Resident Engineer/ Structure Rep, and the subsequent processing for payment to the Contractor by the District Office staff. This activity also includes preparation of Semi Final Estimates (SF). Preparation and processing of the Proposed Final Estimate (PFE) is in activity 295.10.

### Guidance

*Construction Manual, 2, 15*  
*Prevailing State Wage Rates*

### RBS

516-584

### Sub-tasks:

None identified.

### End Product:

The After Acceptance Estimate OR a Semi Final Estimate where there are still unresolved exceptions/claims from the Contractor in response to the Proposed Final Estimate (PFE). It is possible that several Semifinal Estimates will be processed while exceptions/claims are resolved before the After Claims Final Estimate (FE) is processed by the District Office staff for payment to the Contractor.

## 295.10 Prepare Proposed Final Contract Estimate

The work involved in preparation of payment documents and preparing the Proposed Final Estimate (PFE) for processing. The Proposed Final Estimate is done in writing by the Resident Engineer after construction contract acceptance by the District Director and after the progress Estimate After Acceptance has been processed.

If the Contractor reviews the Proposed Final Estimate and returns notice to the District Office and Resident Engineer that he accepts the estimate without exceptions, then the District Office processes the Proposed Final Estimate for payment to the Contractor (in this case, the Proposed Final Estimate is also the Final Estimate (FE)).

If the Contractor reviews the Proposed Final Estimate and accepts the estimate with a following list of exceptions/claims then the work to review those exceptions/claims is included in activity 290.15 "Prepare, Review, and Approve Claim Report". If there are any exceptions/claims, then the work to prepare a Semi Final Estimate (SF) and forward it to the District Office to process for payment is included in this activity (295.05).

Preparing any additional Semifinal Estimates after reaching negotiated settlements or receiving required paperwork for any particular exceptions/claims (but with 1 or more claims still outstanding) will be work included in this activity 295.05.

### Guidance

*Construction Manual, 2, 15*  
*Prevailing State Wage Rates*  
*Project Development Procedures Manual (PDPM), Chapter 2-80, Section 30*  
*Standard Specifications, Section 9-1.07*

### RBS

516-584

**Sub-tasks:**

Perform additional (supplemental) survey/mapping work needed to determine/verify the PFE.

**End Product:**

Proposed Final Estimate (effectively the Final Estimate) where no claims have been submitted.

**295.15 Prepare As-Built Plans**

Includes preparation work involves transferring all as-built changes, or required as-built information onto the set of plans dedicated as the red-line mark-up set of As-Built Plans. This activity also involves putting together the marked up set of As-Built Plans and forwarding all of the District roadway As-Built to the District Office and all of the structure plans to Structures HQ for review. Also included in this activity is work by the design section structural technicians to transfer the red-line As-Built plan mark-ups to the original full size reproducible plan sheets (or CADD file) and forwarding a reproducible set of plans with the transferred As-Built changes to the office 'As-Built' Section for filing, scanning, and microfilming.

**Guidance**

*Construction Manual, 3, 5*  
*Prevailing State Wage Rates*

**RBS**

*510-515*  
*516-584*

**Sub-tasks:**

None identified.

**End Product:**

- As-Built Microfilms for complete set of project plans (roadway + structures) in District Office 'As-Built' Section.
- Structure As-Built plans scanned into database in Sacramento in the Office of Structure Maintenance & Investigations by 'As-Built' Section.
- As-Built microfilms for any Overhead or Underpass forwarded to railroad.

**295.20 Prepare Project History File**

The work involved in the preparation of the construction project files (including information from the District RE file, the District Project Files and the Structures R.E. Pending File). This activity includes the effort in recording & archive storage of project records. Also, included in this activity, the Structure Rep forwards copies of all Pile Records to the Sacramento Structure Construction Office for recording.

**Guidance**

*Construction Manual, 3, 5*  
*Prevailing State Wage Rates*

**RBS**

*510-515*  
*516-584*

**Sub-tasks:**

None identified.

**End Product:**

All records required by the District Office to be stored after construction project completion are bound as a Project File and stored in the District Office.

## 295.25 Prepare Final Report

A Report of Completion for each structure is to be prepared by the Structure Rep for forwarding to the Office of Structure Construction. The Joint Seal Calculations, and all Paint Records are also to be forwarded by the Structure Rep & their staff to the Office of Structure Construction. The Resident Engineer also prepares a Report of Completion for roadway work that includes copies of each of the Reports of Completion for structure work, and forwards it to the District Office.

### Guidance

*Construction Manual*  
*Prevailing State Wage Rates*

### RBS

510-515

### Sub-tasks:

None identified.

### End Product:

- A Report of Completion for each structure with Joint Seal Calculations (when applicable) and Paint Records (when applicable) recorded and scanned into storage by the Office of Structure Maintenance & Investigations in Sacramento.
- A District roadway Report of Completion recorded and stored in the District Office.

## 295.30 Process Final Estimate

The work involved in the preparation of the After Claims Final Estimate. This estimate is prepared and processed either after all claims have been negotiated and resolved (& after any necessary CCOs are processed to resolve claims [see sub-activities for activity 285 'Prepare and Admin. CCOs]) between the Contractor and the Resident Engineer/ Structure Rep (without the need for a District Claim Meeting or Board of Review) or after a decision on the claims is made after a District Claim Meeting or Board of Review. The processing the After Claims Final Estimate does not wait for arbitration if the Contractor decides to pursue a claim to that level.

### Guidance

*Construction Manual, 2, 15*  
*Prevailing State Wage Rates*  
*Project Development Procedures Manual (PDPM), Chapter 2-80, Section 30*  
*Standard Specifications, Section 9-1.07*

### RBS

516-584

### Sub-tasks:

None identified.

### End Product:

Final payment by the State to the construction Contractor for the entire sum so found to be due (the only exception being if the Contractor were to pursue a claim to arbitration and have that arbitration conclude with an award of additional payment). The Contract EA is closed to all further charges (in the event that the Contractor pursues a claim to arbitration, the EA be reopened for charging).





# 300 Perform Final Right of Way Engineering Activities

Work that is normally performed after construction of the project is complete and accepted by the Resident Engineer. Work involved is normally the monumentation of the right of way, relinquishments and vacations, preparation of R/W record maps, and preparation of deed packages for excess land transactions.

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## 300.05 Monument the Right of Way and Prepare Monumentation Maps

Effort includes field and office land surveying work required to be in compliance with the Professional Land Surveyors Act.

### End product:

Filed Monumentation Map

### 300.05.05 Perform Right of Way Monumentation Survey

Includes all right of way monumentation field survey effort before, during and at completion of project construction.

*Note: Pre-construction land-net monument perpetuation effort should be performed under activity 220.05.20*

**Guidance**  
Surveys Manual

**RBS**  
308-310

### 300.05.10 Prepare and File Monumentation Maps

Includes all effort required for preparation and filing of required Monumentation maps. Does not include those maps prepared as Pre-construction perpetuation documents under WBS 220.05.25.

**Guidance**  
Right of Way Manual - Reference Version, Chapter 6  
Surveys Manual

**RBS**  
308-310

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## 300.20 Perform Close Out

Review completed maps and plans. Includes R/W Engineering efforts in reviewing R/W record maps, monumentation maps and review of the project “as-builts” for completeness and accuracy.

**Guidance**  
Right of Way Manual - Reference Version  
Surveys Manual

**RBS**  
308-310

### Sub-tasks:

None identified.

### End product:

Final Record Map

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## 300.25 Prepare Relinquishment and Vacation Maps

Includes all work required to complete the relinquishment and vacation process of state facilities and right of way and collateral facilities, normally after completion of project construction.

**Guidance**  
Drafting and Plans Manual of Instruction  
Right of Way Manual - Forms and Exhibits, Chapter 6  
Right of Way Manual - Reference Version, Chapter 6  
Surveys Manual

**RBS**  
308-310

**Sub-tasks:**

- Prepare Relinquishment Maps
- Prepare Vacation Maps
- Prepare corresponding documentation
- Prepare CTC Resolution

**End product:**

CTC Resolution recorded at County Recorder's Office.

**300.30 Prepare Deed Package for Excess Land Transactions**

Effort includes preparation of documents required to convey property rights to satisfy excess land transactions. Includes preparation of Director's Deed and Plat.

**Guidance**

*Right of Way Manual - Forms and Exhibits, Chapter 6*  
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

**RBS**

308-310

**Sub-tasks:**

None identified.

**End Product:**

Excess Land Deed and Plat

**300.35 Prepare Right of Way Record Map**

Includes all effort in the preparation or modification of right of way maps for filing as an official District R/W Record Map.

**End Product:**

Right of Way Record Map

**300.35.05 Review Temporary Record Map**

Includes effort in completeness/conformance review

**Guidance**

*Drafting and Plans Manual of Instruction*  
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

**RBS**

308-310

**300.35.10 Delineate Excess Land Parcels**

Effort includes identification of excess land parcels.

**Guidance**

*Drafting and Plans Manual of Instruction*  
*Right of Way Manual - Forms and Exhibits, Chapter 6*  
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

**RBS**

308-310

**300.35.15 Verify & Post Conveyance Docs**

Effort includes verifying title and entry of recording data.

**Guidance**

*Right of Way Manual - Reference Version*  
*Surveys Manual*

**RBS**

308-310

**300.35.20 Update Status of Excess Lands Disposition****Guidance**

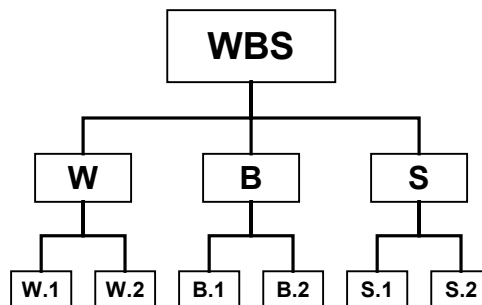
*Right of Way Manual - Reference Version, Chapter 6*  
*Surveys Manual*

**RBS**

308-310

# Part III

## Appendices





## Appendix A: List of Changed Activities from WBS 4.0

*Note: Deletions are indicated by ~~Grey Strikeout~~ and additions are indicated by **Bold Italic**.*

100	<del>PERFORM PROJECT MANAGEMENT</del>
100.05	<del>Develop &amp; Manage Schedule and Support Budget</del> <b>Project Management - PID Phase</b>
100.05.05	<del>Develop &amp; Manage Initial (PID) Project Schedule and Support Budget</del> <b>Project Initiation and Planning</b>
100.05.10	<del>Develop and Manage Baseline Schedule &amp; Support Budget</del> <b>PID Phase Execution and Control</b>
100.05.15	<del>Develop &amp; Maintain Work Agreements</del> <b>PID Phase Close Out</b>
<del>100.05.20</del>	<del>Monitor Expenditure Information</del>
100.10	<del>Maintain Project Data</del> <b>Project Management - PA &amp; ED Phase</b>
100.10.05	<del>Maintain Project Data in Project Management Database</del> <b>PA &amp; ED Phase Initiation and Planning</b>
100.10.10	<del>Obtain EA's and Maintain Accounting Data</del> <b>PA &amp; ED Phase Execution and Control</b>
<b>100.10.15</b>	<b>PA &amp; ED Phase Close Out</b>
<del>100.10.95</del>	<del>Maintain "Other" Data</del>
100.15	<del>Respond to Internal &amp; External Requests for Information</del> <b>Project Management - PS &amp; E Phase</b>
<b>100.15.05</b>	<b>PS &amp; E Phase Initiation and Planning</b>
<b>100.15.10</b>	<b>PS &amp; E Phase Execution and Control</b>
<b>100.15.15</b>	<b>PS &amp; E Phase Close Out</b>
100.20	<del>Procure External Resources</del> <b>Project Management - Construction Phase</b>
100.20.05	<del>Obtain Consultants</del> <b>Construction Phase Initiation and Planning</b>
100.20.10	<del>Administer Consultant Contracts</del> <b>Construction Phase Execution and Control</b>
<b>100.20.15</b>	<b>Project Close Out</b>
<del>100.25</del>	<del>Manage Project Scope</del>
160.05	Review <b>and Update</b> Project Information
<del>160.10.05</del>	<del>Perform Surveys and Mapping for Project Report</del>
<del>160.10.05.05</del>	<del>Perform Corridor (Basic) Control Surveys</del>
<del>160.10.05.10</del>	<del>Perform Project Control Surveys</del>
<del>160.10.05.15</del>	<del>Perform Supplemental Control Surveys</del>
<del>160.10.05.20</del>	<del>Perform Base Photogrammetric Maps and Products</del>
<b>160.20</b>	<b>Project Control Surveys, Mapping and Initial Land Net Mapping for Project Report</b>
<b>160.20.05</b>	Perform Corridor (Basic) Control Surveys for Project Report
<b>160.20.10</b>	<b>Perform Project Control Surveys for Project Report</b>
<b>160.20.15</b>	<b>Perform Supplemental Control Surveys for Project Report</b>
<b>160.20.20</b>	<b>Perform Base Photogrammetric Maps and Products for Project Report</b>
<b>160.20.25</b>	<b>Perform Preliminary Record Data Search for Project Report</b>
<b>160.20.30</b>	<b>Perform Initial Land Net Recovery and Field Ties for Project Report</b>
<b>160.20.35</b>	<b>Perform Preliminary Boundary Determination for Project Report</b>
<b>195</b>	<b>RIGHT OF WAY PROPERTY MANAGEMENT AND EXCESS LAND</b>
<b>195.40</b>	<b>Property Management</b>
<b>195.40.05</b>	<b>Fair Market Rent Determinations (Residential)</b>
<b>195.40.10</b>	<b>Fair Market Rent Determinations (Non-Residential)</b>

<b>195.40.15</b>	<b><i>Regular Property Management</i></b>
<b>195.40.20</b>	<b><i>Property Maintenance and Rehabilitation (Rentable Property)</i></b>
<b>195.40.25</b>	<b><i>Property Maintenance and Rehabilitation (Non-Rentable Property)</i></b>
<b>195.40.30</b>	<b><i>Hazardous Waste and Hazardous Materials</i></b>
<b>195.40.35</b>	<b><i>Transfer of Property to Clearance Status</i></b>
<b>195.45</b>	<b><i>Excess Land</i></b>
<b>195.45.05</b>	<b><i>Excess Lands Inventory</i></b>
<b>195.45.10</b>	<b><i>Excess Land Appraisal and Public Sale Estimate</i></b>
<b>195.45.15</b>	<b><i>Administering Government Code Section 54235</i></b>
<b>195.45.20</b>	<b><i>Property Disposal of Unit up to \$15,000 in Value.</i></b>
<b>195.45.25</b>	<b><i>Property Disposal of Unit between \$15,001 and \$500,000 in Value.</i></b>
<b>195.45.30</b>	<b><i>Property Disposal of Unit over \$500,000 in Value.</i></b>
<b>195.45.35</b>	<b><i>CTC and AAC Coordination</i></b>
220.05	Retrace and Perpetuate Existing Land Net <b><i>for R/W Acquisition</i></b>
220.05.20	Perform <del>Pre-construction</del> Monument Perpetuation Surveys
220.05.25	Prepare and File <del>Pre-construction</del> Perpetuation Documents
225	OBTAIN RIGHT OF WAY <b><i>INTERESTS FOR PROJECT RIGHT OF WAY CERTIFICATION</i></b>
<del>225.05</del>	<del>Appraise Right of Way</del>
<del>225.05.05</del>	<del>Prepare Hardship and Protection Appraisal</del>
<del>225.05.10</del>	<del>Prepare Regular Appraisal</del>
<del>225.05.15</del>	<del>Review or Revise Contract Appraisal Work</del>
<del>225.05.20</del>	<del>Prepare Miscellaneous Appraisals</del>
<del>225.05.25</del>	<del>Prepare Goodwill Appraisals</del>
<del>225.05.30</del>	<del>Prepare Appraisal Revision</del>
<del>225.05.35</del>	<del>R/W Appraisal Staking Survey</del>
<del>225.10</del>	<del>Acquire Right Of Way</del>
<del>225.10.05</del>	<del>Acquire Hardship and Protection Parcels</del>
<del>225.10.10</del>	<del>Obtain Real Property Interests by R/W Contract</del>
<del>225.10.15</del>	<del>Perform Revised/Miscellaneous Acquisition</del>
<del>225.10.20</del>	<del>Obtain Resolution of Necessity and Order for Possession</del>
<del>225.10.25</del>	<del>R/W Acquisition Staking Survey</del>
<del>225.15</del>	<del>Relocate Occupants/Personalty</del>
<del>225.15.05</del>	<del>Provide Relocation Services and Payments</del>
<del>225.15.10</del>	<del>Prepare Replacement Housing Valuations</del>
<del>225.20</del>	<del>Prepare R/W Certification Documents</del>
<del>225.25</del>	<del>Process Federal Aid Documents</del>
<del>225.25.05</del>	<del>Prepare and Obtain Approvals for the FNM-76</del>
<del>225.25.10</del>	<del>Perform Final Vouchering</del>
<del>225.30</del>	<del>Clear Right of Way</del>
<del>225.30.05</del>	<del>Sell Improvements</del>
<del>225.30.10</del>	<del>Demolish Improvements</del>
<del>225.35</del>	<del>Perform Continuing Condemnation Activities</del>
<del>225.35.05</del>	<del>Prepare Trial Exhibits</del>

<del>225.35.10</del>	<del>Confer with Attorneys</del>
<del>225.35.15</del>	<del>Review/Prepare Condemnation Appraisal</del>
<del>225.35.20</del>	<del>Appear as Expert Witness</del>
<del>225.40</del>	<del>Property Management</del>
<del>225.40.05</del>	<del>Fair Market Rent Determinations (Residential)</del>
<del>225.40.10</del>	<del>Fair Market Rent Determinations (Non-Residential)</del>
<del>225.40.15</del>	<del>Regular Rental Property Management</del>
<del>225.40.20</del>	<del>Property Maintenance and Rehabilitation (Rentable Property)</del>
<del>225.40.25</del>	<del>Property Maintenance and Rehabilitation (Non-Rentable Property)</del>
<del>225.40.30</del>	<del>Hazardous Waste and Hazardous Materials</del>
<del>225.40.35</del>	<del>Transfer of Property to Clearance Status</del>
<del>225.45</del>	<del>Excess Land</del>
<del>225.45.05</del>	<del>Excess Lands Inventory</del>
<del>225.45.10</del>	<del>Excess Land Appraisal and Public Sale Estimate</del>
<del>225.45.15</del>	<del>Administering Government Code Section 54235</del>
<del>225.45.20</del>	<del>Property Disposal of Unit up to \$15,000 in Value.</del>
<del>225.45.25</del>	<del>Property Disposal of Unit between \$15,001 and \$500,000 in Value.</del>
<del>225.45.30</del>	<del>Property Disposal of Unit over \$500,000 in Value.</del>
<del>225.45.35</del>	<del>CTC and AAC Coordination</del>
<b>225.50</b>	<b><i>Parcel and Project Documentation</i></b>
<b>225.55</b>	<b><i>Obtain Right of Way Interests</i></b>
<b>225.55.05</b>	<b><i>Right of Way Appraisals</i></b>
<b>225.55.10</b>	<b><i>Right of Way Acquisitions</i></b>
<b>225.55.15</b>	<b><i>Right of Way Relocation Assistance</i></b>
<b>225.55.20</b>	<b><i>Right of Way Clearance</i></b>
<b>225.55.25</b>	<b><i>Right of Way Condemnation</i></b>
<b>230.60</b>	Review and Update Project Information for PS &E Package
 <b>245</b>	 <b><i>POST RIGHT OF WAY CERTIFICATION WORK</i></b>
<b>245.50</b>	<b><i>Parcel and Project Documentation</i></b>
<b>245.55</b>	<b><i>Close out Right of Way Interests</i></b>
<b>245.55.05</b>	<b><i>Right of Way Appraisals</i></b>
<b>245.55.10</b>	<b><i>Right of Way Acquisitions</i></b>
<b>245.55.15</b>	<b><i>Right of Way Relocation Assistance</i></b>
<b>245.55.20</b>	<b><i>Right of Way Clearance</i></b>
<b>245.55.25</b>	<b><i>Right of Way Condemnation</i></b>

## Appendix B: List of Major Tasks Sorted by Level 4

*Note: Includes Level 4 code.*

0.100	Project Management
1.150	Develop Project Initiation Document (PID)
2.160	Perform Preliminary Engineering Studies and Prepare Draft Project Report
2.165	Perform Environmental Studies and Prepare Draft Environmental Document (DED)
2.175	Circulate Draft Environmental Document and Select Preferred Project Alternative
2.180	Prepare and Approve Project Report and Final Environmental Document
3.205	Obtain Permits, Agreements, and Route Adoptions
3.235	Mitigate Environmental Impacts and Clean-up Hazardous Waste
4.185	Prepare Base Maps and Plan Sheets
4.190	Prepare Structure Site Plans
4.230	Prepare Draft PS&E
4.255	Circulate, Review, and Prepare Final District PS&E Package
5.210	Prepare Preliminary Structures Design Data
5.215	Prepare Structures General Plans
5.240	Prepare Draft Structures PS&E
5.250	Prepare Final Structures PS&E Package
6.195	Right of Way Property Management and Excess Land
6.200	Coordinate Utilities
6.220	Perform Right of Way Engineering
6.225	Obtain Right of Way Interests for Project Right of Way Certification
6.245	Post Right of Way Certification Work
7.260	Prepare Contract Documents
7.265	Advertise, Open Bids, Award, and Approve Contract
8.270	Perform Construction Engineering and General Contract Administration
8.285	Prepare and Administer Contract Change Orders
9.290	Resolve Contract Claims
9.295	Accept Contract, Prepare Final Construction Estimate, and Prepare Final Report
9.300	Perform Final Right of Way Engineering Activities



## Appendix C: List of Major Tasks Sorted by Level 5

*Note: Includes Level 4 code.*

0.100	Project Management
1.150	Develop Project Initiation Document (PID)
2.160	Perform Preliminary Engineering Studies and Prepare Draft Project Report
2.165	Perform Environmental Studies and Prepare Draft Environmental Document (DED)
2.175	Circulate Draft Environmental Document and Select Preferred Project Alternative
2.180	Prepare and Approve Project Report and Final Environmental Document
4.185	Prepare Base Maps and Plan Sheets
4.190	Prepare Structure Site Plans
6.195	Right of Way Property Management and Excess Land
6.200	Coordinate Utilities
3.205	Obtain Permits, Agreements, and Route Adoptions
5.210	Prepare Preliminary Structures Design Data
5.215	Prepare Structures General Plans
6.220	Perform Right of Way Engineering
6.225	Obtain Right of Way Interests for Project Right of Way Certification
4.230	Prepare Draft PS&E
3.235	Mitigate Environmental Impacts and Clean-up Hazardous Waste
5.240	Prepare Draft Structures PS&E
6.245	Post Right of Way Certification Work
5.250	Prepare Final Structures PS&E Package
4.255	Circulate, Review, and Prepare Final District PS&E Package
7.260	Prepare Contract Documents
7.265	Advertise, Open Bids, Award, and Approve Contract
8.270	Perform Construction Engineering and General Contract Administration
8.285	Prepare and Administer Contract Change Orders
9.290	Resolve Contract Claims
9.295	Accept Contract, Prepare Final Construction Estimate, and Prepare Final Report
9.300	Perform Final Right of Way Engineering Activities

## Appendix D: List of All Activities

<b>100</b>	<b>PROJECT MANAGEMENT</b>
100.05	Project Management - PID Phase
100.05.05	Project Initiation and Planning
100.05.10	PID Phase Execution and Control
100.05.15	PID Phase Close Out
100.10	Project Management - PA & ED Phase
100.10.05	PA & ED Phase Initiation and Planning
100.10.10	PA & ED Phase Execution and Control
100.10.15	PA & ED Phase Close Out
100.15	Project Management - PS & E Phase
100.15.05	PS & E Phase Initiation and Planning
100.15.10	PS & E Phase Execution and Control
100.15.15	PS & E Phase Close Out
100.20	Project Management - Construction Phase
100.20.05	Construction Phase Initiation and Planning
100.20.10	Construction Phase Execution and Control
100.20.15	Project Close Out
<b>150</b>	<b>DEVELOP PROJECT INITIATION DOCUMENT (PID)</b>
150.05	Define Transportation Problem & Assess Site
150.05.05	Obtain and Review Existing Reports, Studies, and Mapping
150.05.10	Prepare Geology Hazards Review
150.05.15	Perform Utility Search
150.05.20	Identify Environmental Constraints
150.05.25	Prepare Traffic Forecasts/Modeling
150.05.30	Perform Surveys & Mapping for PID
150.05.35	Define Problem
150.10	Develop Initial Alternatives
150.10.05	Obtain Public/Local Agency Input
150.10.10	Perform Value Analysis
150.10.15	Develop Concept Geometrics
150.15	Analyze Alternatives
150.15.05	Prepare RW Data Sheets
150.15.10	Assess Utility Relocation Requirements
150.15.15	Determine Railroad Involvement
150.15.20	Prepare Preliminary Geotechnical Report
150.15.25	Prepare Preliminary Materials Report
150.15.30	Prepare Structures Advance Planning Study
150.15.35	Perform Multimodal Review
150.15.40	Perform Hydraulic Review
150.15.45	Perform Traffic Capacity Analysis
150.15.50	Perform Traffic Studies
150.15.55	Develop Construction Estimates
150.20	Perform Preliminary Environmental Evaluation
150.20.05	Perform Initial Noise Study

150.20.10	Perform Hazardous Waste Investigation (Initial Site Assessment (ISA))
150.20.15	Perform Landscape / Aesthetics Analysis
150.20.20	Perform Initial NEPA/404 Coordination
150.20.25	Perform Initial Biology Study
150.20.30	Perform Initial Records and Literature Search for Cultural Resources
150.20.40	Perform Initial Community Impact Analysis, Land Use and Growth Studies
150.20.45	Perform Initial Air Quality Study
150.20.50	Perform Initial Water Quality Studies
150.20.55	Perform Initial Floodplain Study
150.20.60	Prepare Preliminary Environmental Evaluation
150.20.65	Perform Initial Paleontology Study
150.20.70	Perform Initial Native American Coordination
150.25	Prepare and Approve PID (PSR, PSSR, etc.)
150.25.05	Prepare Draft PID
150.25.10	Prepare and Obtain Approval for Exceptions to Design Standards
150.25.15	Prepare and Approve Access Modification Request
150.25.20	Circulate, Review & Approve PID

## **160      PERFORM PRELIMINARY ENGINEERING STUDIES AND PREPARE DRAFT PROJECT REPORT**

160.05	Review and Update Project Information
160.05.05	Review Approved PID
160.05.10	Review Geotechnical Information
160.05.15	Review Materials Information
160.05.20	Review Traffic Data and Forecasts
160.05.25	Review Geometrics
160.05.30	Review Project Scope
160.05.35	Review Project Cost Estimate
160.10	Perform Engineering Studies
160.10.10	Prepare Traffic Forecasts/Modeling
160.10.15	Prepare Geometric Plans for Project Alternatives
160.10.20	Perform Value Analysis
160.10.25	Perform Hydraulics / Hydrology Studies
160.10.30	Develop Highway Planting Design Concepts
160.10.35	Perform Traffic Operational Analysis
160.10.40	Review and Update Right of Way Data Sheet
160.10.45	Re-assess Utility Impacts
160.10.50	Perform Railroad Study
160.10.55	Perform Multi-modal Study
160.10.60	Perform Park & Ride Study
160.10.65	Perform Relinquishment and Vacation Study
160.10.70	Perform Traffic Studies
160.10.75	Prepare / Update Materials Information for Project Report
160.10.80	Prepare / Update Geotechnical Information
160.10.85	Prepare Structures Advanced Planning Studies for New Alternatives
160.10.90	Prepare HOV Report
160.15	Prepare Draft Project Report
160.15.05	Prepare Cost Estimates for Alternatives
160.15.10	Prepare Fact Sheet for Exceptions to Design Standards

160.15.15	Obtain Approval of Exceptions to Encroachment Policy
160.15.20	Prepare Draft Project Report
160.15.25	Circulate, Review, & Approve Draft Project Report
160.20	Project Control Surveys, Mapping and Initial Land Net Mapping for Project Report
160.20.05	Perform Corridor (Basic) Control Surveys for Project Report
160.20.10	Perform Project Control Surveys for Project Report
160.20.15	Perform Supplemental Control Surveys for Project Report
160.20.20	Perform Base Photogrammetric Maps and Products for Project Report
160.20.25	Perform Preliminary Record Data Search for Project Report
160.20.30	Perform Initial Land Net Recovery and Field Ties for Project Report
160.20.35	Perform Preliminary Boundary Determination for Project Report

**165****PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT (DED)**

165.05	Perform Environmental Scoping and Select Alternatives for Study
165.05.05	Review Project Information
165.05.10	Perform Public and Agency Scoping Process
165.05.15	Select Alternatives for Further Study
165.05.20	Prepare Maps for Environmental Evaluation
165.10	Perform General Environmental Studies
165.10.05	Perform Surveys and Mapping for Environmental Studies
165.10.10	Obtain Right of Entry for Environmental Studies
165.10.15	Perform Community Impact, Land Use, and Growth Studies
165.10.20	Perform Visual Impact Analysis
165.10.25	Perform Noise Study
165.10.30	Perform Air Quality Study
165.10.35	Perform Water Quality Studies
165.10.40	Perform Energy Studies
165.10.45	Prepare Summary of Geotechnical Report
165.10.50	Perform Preliminary Site Investigation for Hazardous Waste
165.10.55	Prepare Draft Right of Way Relocation Impact Document
165.10.60	Prepare Location Hydraulic / Floodplain Study Report
165.10.65	Perform Paleontology Study
165.15	Perform Biological Studies
165.15.05	Perform Biological Assessment
165.15.10	Perform Wetlands Study
165.15.15	Perform Resource Agency Permit Related Coordination
165.15.20	Prepare Natural Environment Study Report
165.20	Perform Cultural Resources Studies
165.20.05	Perform Archaeological Survey
165.20.05.05	Prepare Area of Potential Effect (APE)/Study Area Map
165.20.05.10	Conduct Native American Consultation
165.20.05.15	Perform Records and Literature Search
165.20.05.20	Conduct Field Survey
165.20.05.25	Prepare Archaeological Survey Report (ASR)
165.20.10	Perform Extended Phase I Archaeological Studies
165.20.10.05	Conduct Native American Consultation
165.20.10.10	Prepare Proposal
165.20.10.15	Conduct Field Investigation

165.20.10.20	Analyze Materials
165.20.10.25	Prepare Report
165.20.15	Perform Phase II Archaeological Studies
165.20.15.05	Conduct Native American Consultation
165.20.15.10	Prepare Proposal
165.20.15.15	Conduct Field Investigation
165.20.15.20	Analyze Materials
165.20.15.25	Prepare Report
165.20.20	Perform Historical and Architectural Resource Studies
165.20.20.05	Prepare Preliminary Area of Potential Effects (Federal)/ Study Area Maps (State only)
165.20.20.10	Prepare Historic Architectural Survey Report (HASR)
165.20.20.15	Prepare Historic Resources Evaluation Report (HRER)
165.20.20.20	Prepare Bridge Evaluation
165.20.25	Prepare and Process Cultural Resource Compliance Documents
165.20.25.05	Prepare Final Area of Potential Effects (Federal)/ Study Area Maps (State only)
165.20.25.10	Perform PRC 5024.5 Consultation
165.20.25.15	Prepare Historic Property Survey Report (HPSR)/ Historic Property Compliance Report (HPCR)
165.20.25.20	Prepare Finding of Effect
165.20.25.25	Prepare Archaeological Data Recovery Plan/Treatment Plan
165.20.25.30	Prepare Memorandum of Agreement
165.25	Prepare and Approve Draft Environmental Document
165.25.05	Prepare Draft Environmental Document
165.25.10	Prepare Section 4(f) Evaluation
165.25.15	Prepare Categorical Exemption/ Categorical Exclusion Determination
165.25.20	Conduct Environmental PEER & Other Reviews
165.25.25	Obtain Approval to Circulate

## **175 CIRCULATE DRAFT ENVIRONMENTAL DOCUMENT AND SELECT PREFERRED PROJECT ALTERNATIVE**

175.05	Circulate DED
175.05.05	Prepare Master Distribution and Invitation Lists
175.05.10	Prepare Notices Regarding Public Hearing & Availability of DED
175.05.15	Publish and Circulate DED
175.05.20	Obtain Federal Consistency Determination (Coastal Zone)
175.10	Prepare for, and Hold Public Hearing
175.10.05	Determine Need for Public Hearing Process
175.10.10	Arrange for Public Hearing Logistics
175.10.15	Prepare Displays for Public Hearing
175.10.20	Prepare and Publish Notices of Public Hearing & Availability of DED
175.10.25	Review Map Displays and Discuss Public Hearing
175.10.30	Display Public Hearing Maps
175.10.35	Hold Public Hearing
175.10.40	Prepare and Distribute Record of Public Hearing
175.15	Respond to Public Comments and Correspondence
175.20	Select Preferred Alternative

## **180 PREPARE AND APPROVE PROJECT REPORT AND FINAL ENVIRONMENTAL DOCUMENT**

180.05	Prepare and Approve Project Report
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180.05.05	Update Draft Project Report
180.05.10	Review and Approve Project Report
180.10	Prepare and Approve Final Environmental Document (FED)
180.10.05	Prepare and Approve FED
180.10.10	Public Distribution of FED
180.10.15	Prepare Final Right of Way Relocation Impact Document
180.15	Close Out Environmental Process
180.15.05	Prepare and Approve Record of Decision (NEPA)
180.15.10	Prepare and File Notice of Determination (CEQA)

## **185            PREPARE BASE MAPS AND PLAN SHEETS**

185.05	Review and Update Project Information
185.05.05	Review Project Concept
185.05.10	Update Project Information
185.10	Perform Design Surveys and Photogrammetric Mapping
185.10.05	Perform Control Surveys for Design
185.10.10	Prepare Photogrammetric Maps and Products for Design
185.10.15	Perform Design Data Surveys
185.10.20	Perform Pavement Elevation Surveys
185.15	Perform Preliminary Design
185.15.05	Perform Roadway and Misc. Design
185.15.10	Review Proposed Geometrics
185.15.15	Prepare Request for Exceptions to Design Standards
185.15.20	Perform Value Analysis
185.20	Prepare Engineering Reports
185.20.05	Update Traffic Data, Analysis, and Forecasts
185.20.10	Prepare Hydrology and Hydraulic Reports
185.20.15	Prepare Geotechnical Design Report
185.20.20	Prepare Pavement Design Report
185.20.25	Prepare Materials Report
185.20.30	Prepare Soundwall Design Report
185.25	Determine Right of Way Requirements
185.25.05	Review Project With Affected Agencies
185.25.10	Determine Fee and Easement Requirements
185.25.15	Prepare Right of Way Requirements Maps
185.25.20	Determine Final Railroad Involvement
185.25.25	Determine Water Well Abandonment Needs

## **190            PREPARE STRUCTURE SITE PLANS**

190.10	Prepare Site Plans for Retaining Walls and Non-standard Earth Retention Systems
190.15	Prepare Site Plans for Soundwalls on Retaining Systems or Structures
190.20	Prepare Site Plans for Pumping Plants
190.25	Prepare Site Plans for Special-Design Culverts
190.30	Prepare Site Plans for Bridges and Structures

## **195            RIGHT OF WAY PROPERTY MANAGEMENT AND EXCESS LAND**

195.40	Property Management
195.40.05	Fair Market Rent Determinations (Residential)

195.40.10	Fair Market Rent Determinations (Non-Residential)
195.40.15	Regular Property Management
195.40.20	Property Maintenance and Rehabilitation (Rentable Property)
195.40.25	Property Maintenance and Rehabilitation (Non-Rentable Property)
195.40.30	Hazardous Waste and Hazardous Materials
195.40.35	Transfer of Property to Clearance Status
195.45	Excess Land
195.45.05	Excess Lands Inventory
195.45.10	Excess Land Appraisal and Public Sale Estimate
195.45.15	Administering Government Code Section 54235
195.45.20	Property Disposal of Unit up to \$15,000 in Value.
195.45.25	Property Disposal of Unit between \$15,001 and \$500,000 in Value.
195.45.30	Property Disposal of Unit over \$500,000 in Value.
195.45.35	CTC and AAC Coordination

## **200            COORDINATE UTILITIES**

200.05	Perform Preliminary Utility Verification
200.10	Determine Utility Locations (Potholing) and Prepare Conflict Maps
200.10.05	Prepare Notices and Obtain Agreements for Potholing
200.10.10	Perform Potholing
200.10.15	Perform Utility Surveys
200.10.20	Review for Conflicts after Utility Surveys
200.10.25	Prepare Utility Conflict Maps
200.10.30	Pothole Revised Notice, Amended UA & Process Billings per UA
200.15	Utility Conflict Resolution
200.20	Implement Utility Relocation Plan
200.20.05	Prepare, Approve and Transmit Liability/FHWA Authorization Package
200.20.25	Relocation Revised Notice, Amended UA & Process Billings per UA
200.20.30	Prepare Utility JUA/CCUA/Conveyance Document Packages
200.25	Manage the Utility Relocation

## **205            OBTAIN PERMITS, AGREEMENTS, AND ROUTE ADOPTIONS**

205.05	Determine Required Permits
205.10	Obtain Permits
205.10.05	Obtain U.S. Corps of Engineers Permit (404)
205.10.10	Obtain U.S. Forest Service Permit
205.10.15	Obtain U.S. Coast Guard Permit
205.10.20	Obtain Department of Fish & Game Permit (1601/1603)
205.10.25	Obtain Coastal Development Permit
205.10.30	Obtain Local Agency Concurrence/Permit
205.10.40	Obtain Waste Discharge Permit (NPDES)
205.10.45	Obtain U.S. Fish and Wildlife Service Approval
205.10.50	Obtain Regional Water Quality Control Board Permit (401)
205.10.95	Obtain "Other" Permits
205.15	Obtain Railroad Agreements
205.15.05	Obtain Plan Approval
205.15.10	Prepare Special Provisions and Insurance Clauses
205.15.15	Prepare Service Contract for Railroad Services

205.15.20	Negotiate and Obtain Construction and Maintenance Agreements
205.15.25	Prepare PUC Exhibits and Application
205.20	Obtain Freeway Agreements
205.20.05	Prepare Draft Freeway Agreement
205.20.10	Review Draft Freeway Agreement
205.20.15	Prepare Final Freeway Agreement
205.20.20	Execute Freeway Agreement
205.25	Prepare Agreement for Materials Sites
205.30	Prepare and Execute Maintenance Agreement
205.35	Prepare and Execute Cooperative Agreement
205.35.05	Prepare and Execute Cooperative Agreement for Environmental Process
205.35.10	Prepare and Execute Cooperative Agreement for Design
205.35.15	Prepare and Execute Cooperative Agreement for Construction
205.35.20	Prepare and Execute Cooperative Agreement for R/W
205.40	Obtain Route Adoptions
205.40.05	Prepare Route Adoption Map
205.40.10	Prepare New Connection Request & Route Adoption for Submittal to CTC
205.40.15	Place Route Adoption and Public Road Connections On CTC Agenda
205.45	Obtain MOU from Tribal Employment Rights Office (TERO)
205.50	Prepare and Execute Cooperative Agreement for Relinquishment

## **210 PREPARE PRELIMINARY STRUCTURES DESIGN DATA**

210.01	Prepare Preliminary Structures Design Data for Structure 1
210.01.05	Review District Submittal
210.01.10	Perform Structures Site Investigation
210.01.15	Prepare Preliminary Structure Report
210.01.20	Prepare Draft Foundation Plan
210.01.25	Prepare Preliminary Structures Foundation Report
210.01.30	Prepare Hydrology Report
210.02	Prepare Preliminary Structures Design Data for Structure 2
210.02.05	Review District Submittal
210.02.10	Perform Structures Site Investigation
210.02.15	Prepare Preliminary Structure Report
210.02.20	Prepare Draft Foundation Plan
210.02.25	Prepare Preliminary Structures Foundation Report
210.02.30	Prepare Hydrology Report
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210.80	Prepare Preliminary Structures Design Data for Structure 80 (Same text and activities as other structures above)
210.95	Prepare Preliminary Structures Design Data for "Other" Structures
210.95.05	Review District Submittal
210.95.10	Perform Structures Site Investigation
210.95.15	Prepare Preliminary Structure Report
210.95.20	Prepare Draft Foundation Plan
210.95.25	Prepare Preliminary Structures Foundation Report
210.95.30	Prepare Hydrology Report



<b>215</b>	<b>PREPARE STRUCTURES GENERAL PLANS</b>
215.01	Prepare Structure General Plans for Structure 1
215.01.05	Develop Preliminary Design
215.01.10	Prepare Preliminary Plan Sheets
215.01.15	Develop Preliminary Quantities
215.01.20	Perform Foundation Field Investigation
215.01.25	Prepare Foundation Report and Log of Test Borings
215.02	Prepare Structure General Plans for Structure 2
215.02.05	Develop Preliminary Design
215.02.10	Prepare Preliminary Plan Sheets
215.02.15	Develop Preliminary Quantities
215.02.20	Perform Foundation Field Investigation
215.02.25	Prepare Foundation Report and Log of Test Borings
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215.80	Prepare Structure General Plans for Structure 80 (Same text and activities as for structures above)
215.90	Prepare Structure General Plans for "Overall" Project
215.90.05	Develop Preliminary Estimates
215.90.10	Approve Preliminary Plans (Type Selection/Strategy Mtg.)
215.95	Prepare Structure General Plans for "Other" Structures
215.95.05	Develop Preliminary Design
215.95.10	Prepare Preliminary Plan Sheets
215.95.15	Develop Preliminary Quantities
215.95.20	Perform Foundation Field Investigation
215.95.25	Prepare Foundation Report and Log of Test Borings
<b>220</b>	<b>PERFORM RIGHT OF WAY ENGINEERING</b>
220.05	Retrace and Perpetuate Existing Land Net for R/W Acquisition
220.05.05	Perform Record Data Search
220.05.10	Perform Land Net Recovery and Field Ties
220.05.20	Perform Monument Perpetuation Surveys
220.05.25	Prepare and File Perpetuation Documents
220.10	Prepare Land Net Map
220.15	Prepare Right of Way Maps
220.15.05	Prepare Appraisal Map
220.15.15	Prepare State or Federal Application Map
220.15.30	Prepare Comparable Sales Map
220.15.35	Prepare Hardship or Protection Map
220.15.95	Prepare "Other" Maps
220.20	Prepare Acquisition Document
220.20.05	Prepare Deeds
220.20.15	Prepare Resolution of Necessity and Plats
220.25	Prepare Deeds Package to Fulfill Contract Obligations
220.25.05	Prepare Director's Deeds and Plats
220.25.15	Prepare Utility Legal Description and Plat
220.25.95	Prepare "Other" Deeds and Documents
220.30	Perform Right of Way Revisions

- 220.30.05 Perform Revision Initiated by Others
- 220.30.10 Perform Revision Initiated by Right of Way

## **225 OBTAIN RIGHT OF WAY INTERESTS FOR PROJECT RIGHT OF WAY CERTIFICATION**

- 225.50 Parcel and Project Documentation
- 225.55 Obtain Right of Way Interests
  - 225.55.05 Right of Way Appraisals
  - 225.55.10 Right of Way Acquisitions
  - 225.55.15 Right of Way Relocation Assistance
  - 225.55.20 Right of Way Clearance
  - 225.55.25 Right of Way Condemnation

## **230 PREPARE DRAFT PS&E**

- 230.05 Prepare Draft Roadway Plans
  - 230.05.05 Prepare Title Sheet
  - 230.05.10 Prepare Typical Cross Sections
  - 230.05.15 Prepare Key Map and Line Index
  - 230.05.20 Prepare Roadway Layouts
  - 230.05.25 Prepare Profile and Superelevation Sheets
  - 230.05.30 Prepare Construction Details
  - 230.05.35 Prepare Contour Grading Plans
  - 230.05.40 Prepare Summary of Quantities Sheets
  - 230.05.45 Prepare Noise Barrier Plans
  - 230.05.50 Prepare Retaining Wall Plans
  - 230.05.55 Select Standard Plans
  - 230.05.60 Prepare Stage Construction and Detour Plans or Traffic Handling Plans
  - 230.05.65 Prepare Water Pollution Control Plan
- 230.10 Prepare Draft Highway Planting Plans
  - 230.10.05 Prepare Highway Planting Plans
  - 230.10.15 Prepare Plant List
  - 230.10.20 Prepare Irrigation Plans
  - 230.10.30 Prepare Irrigation Quantity Sheets
- 230.15 Prepare Draft Traffic Plans
  - 230.15.05 Prepare Signing and Pavement Delineation Plans
  - 230.15.10 Prepare Construction Area Signs Plans
  - 230.15.15 Prepare Traffic Electrical Plans
- 230.20 Prepare Traffic Management Plan
- 230.25 Prepare Draft Utility Plans
  - 230.25.05 Prepare "New Facility" Plans
  - 230.25.10 Prepare Utility Relocation Plans
- 230.30 Prepare Draft Drainage Plans
- 230.35 Prepare Draft Specifications
  - 230.35.05 Develop Roadway Specifications
  - 230.35.10 Develop Highway Planting Specifications
  - 230.35.15 Develop Traffic Specifications
  - 230.35.20 Develop Electrical Specifications
  - 230.35.25 Develop Utility Specifications
  - 230.35.30 Develop Hydraulic Specifications

230.35.35	Develop Water Pollution Control Specifications
230.35.40	Develop Erosion Control Specifications
230.40	Prepare Draft PS&E Quantities and Estimates
230.40.05	Calculate Roadway Quantities and Estimate
230.40.10	Calculate Highway Planting Quantities and Estimate
230.40.15	Calculate Drainage Quantities and Estimate
230.40.20	Calculate Traffic Quantities and Estimate
230.40.25	Calculate Electrical Quantities and Estimate
230.40.30	Calculate Utility Quantities and Estimate
230.40.35	Calculate Water Pollution Control Quantities and Estimate
230.40.40	Calculate Erosion Control Quantities and Estimate
230.55	Incorporate Structures Draft PS & E
230.60	Review and Update Project Information for PS & E Package

### **235            MITIGATE ENVIRONMENTAL IMPACTS AND CLEAN-UP HAZARDOUS WASTE**

235.05	Perform Environmental Mitigation
235.05.05	Perform Historical Structures Mitigation
235.05.10	Perform Archaeological and Cultural Mitigation
235.05.15	Perform Biological Mitigation
235.05.20	Perform Environmental Mitigation R/W Work
235.05.25	Perform Paleontology Mitigation
235.10	Perform Detailed Site Investigation for Hazardous Waste
235.10.05	Obtain Right or Permit for Hazardous Waste Site Investigations
235.10.10	Perform Surveys to Locate Hazardous Waste Sites
235.10.15	Conduct Detailed Investigation
235.15	Develop Hazardous Waste Management Plan
235.20	Prepare Hazardous Waste PS&E
235.25	Perform Hazardous Waste Clean-up
235.30	Certify Freedom of Hazardous Waste
235.35	Perform Long Term Mitigation Monitoring

### **240            PREPARE DRAFT STRUCTURES PS&E**

240.01	Prepare Draft Structure PS&E for Structure 1
240.01.05	Perform Design
240.01.10	Prepare Plan Sheets
240.01.15	Check Design and Plan Sheets
240.01.20	Prepare Quantities
240.02	Prepare Draft Structure PS&E for Structure 2
240.02.05	Perform Design
240.02.10	Prepare Plan Sheets
240.02.15	Check Design and Plan Sheets
240.02.20	Prepare Quantities
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240.80	Prepare Draft Structure PS&E for Structure 80 (Same text and activities as for other structures above)
240.85	Overall Draft PS&E Development
240.90	Prepare Draft Structure PS&E for "Overall" Project

240.90.15	Perform Foundation Review
240.90.20	Prepare Draft Specifications
240.90.25	Prepare Estimate
240.90.30	Review Draft Plans, Specifications, and Estimate
240.95	Prepare Draft Structure PS&E for "Other" Structures
240.95.05	Perform Design
240.95.10	Prepare Plan Sheets
240.95.15	Check Design and Plan Sheets
240.95.20	Prepare Quantities

## **245 POST RIGHT OF WAY CERTIFICATION WORK**

245.50	Parcel and Project Documentation
245.55	Close out Right of Way Interests
245.55.05	Right of Way Appraisals
245.55.10	Right of Way Acquisitions
245.55.15	Right of Way Relocation Assistance
245.55.20	Right of Way Clearance
245.55.25	Right of Way Condemnation

## **250 PREPARE FINAL STRUCTURES PS&E PACKAGE**

250.10	Finalize Structures PS&E Package
250.15	External Review of Structures PS&E Package

## **255 CIRCULATE, REVIEW, AND PREPARE FINAL DISTRICT PS&E PACKAGE**

255.05	Circulate & Review Draft District PS&E Package
255.10	Update PS&E Package
255.10.05	Update Roadway PS&E
255.10.10	Update Highway Planting PS&E
255.10.15	Update Traffic PS&E
255.10.20	Update Hydraulics PS&E
255.10.25	Update Technical Reports
255.10.30	Update Utility PS&E
255.10.35	Update Electrical PS&E
255.15	Perform Environmental Reevaluation
255.20	Prepare Final District PS&E Package
255.20.05	Review Plans for Drafting Standards Compliance
255.20.10	Incorporate Final Structures Specifications and Estimate into Final District PS&E
255.20.15	Prepare Request for Funds
255.25	Prepare Geotechnical Information Handout
255.30	Prepare Materials Information Handout

## **260 PREPARE CONTRACT DOCUMENTS**

260.10	Produce Check Prints
260.15	Prepare Draft Contract Documents
260.15.05	Verify PS&E is Complete and Conforms to Policies & Standards
260.15.10	Incorporate District Revisions

## **265 ADVERTISE, OPEN BIDS, AWARD, AND APPROVE CONTRACT**

265.05	Prepare Project for Advertising
265.05.05	Schedule Project for Advertising
265.05.10	Final Plan Preparation
265.05.15	Update Contract Documents
265.05.20	Develop DVBE/DBE Match List and Set Goals
265.05.25	Perform Fund Analysis and Finalize BEES
265.05.30	Prepare Final Specifications, Proposal & Contract Documents
265.05.35	Delineate Plans
265.05.40	Reproduce Contract Documents
265.10	Advertise Project
265.15	Distribute Bid Documents
265.20	Develop and Issue Addenda
265.25	Respond to Inquiries & Open Bids
265.30	Award Contract
265.30.05	DVBE/DBE Goal Evaluation, Good Faith Effort and Hearings
265.30.10	Resolve Bid Award Issues and Hearings
265.30.15	Prepare, Process and Award Contract
265.35	Execute and Approve Contract

## **270      PERFORM CONSTRUCTION ENGINEERING AND GENERAL CONTRACT ADMINISTRATION**

270.05	Prepare Resident Engineer's File
270.10	Prepare Staking Notes
270.15	Perform Construction Staking
270.15.10	Perform Re-staking
270.15.15	Perform Slope Staking
270.15.20	Perform Fence Staking
270.15.25	Perform Rough Grade Staking
270.15.30	Perform Finish Grade and Curb Staking
270.15.35	Perform Drainage and Minor Structure Staking
270.15.40	Perform Utility Staking
270.15.45	Perform Major Structure Staking
270.15.50	Perform Miscellaneous Staking
270.15.55	Perform Construction Photogrammetry
270.20	Perform Construction Engineering Work
270.20.01	Perform Construction Engineering Work for Construction Period 1
270.20.01.05	Review Resident Engineer's File
270.20.01.10	Review Project Plans, Special Provisions, and Estimate
270.20.01.15	Determine Contract Pay Quantities
270.20.01.20	Determine Lines and Grades Control
270.20.01.25	Review Contractors' Falsework Submittals
270.20.01.30	Review Contractors' Trenching and Shoring Submittals
270.20.01.35	Review Shop Plans
270.20.01.40	Review Cost Reduction Incentive Proposals (CRIPS)
270.20.01.45	Review Contractors' Water Pollution Control Program
270.20.01.50	Provide Technical Support
270.20.02	Perform Construction Engineering Work for Construction Period 2
270.20.02.05	Review Resident Engineer's File
270.20.02.10	Review Project Plans, Special Provisions, and Estimate

270.20.02.15	Determine Contract Pay Quantities
270.20.02.20	Determine Lines and Grades Control
270.20.02.25	Review Contractors' Falsework Submittals
270.20.02.30	Review Contractors' Trenching and Shoring Submittals
270.20.02.35	Review Shop Plans
270.20.02.40	Review Cost Reduction Incentive Proposals (CRIPS)
270.20.02.45	Review Contractors' Water Pollution Control Program
270.20.02.50	Provide Technical Support
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270.20.80	Perform Construction Engineering Work for Construction Period 80 (Same activities and description as for other construction periods above)
270.25	Perform Construction Contract Administration Work
270.25.01	Perform Construction Contract Administration Work for Construction Period 1
270.25.01.05	Secure Lease for Resident Engineer Office Space or Trailer
270.25.01.10	Set Up Construction Project Files
270.25.01.15	Conduct Pre-construction Meeting
270.25.01.20	Prepare Progress Pay Estimates
270.25.01.25	Prepare Weekly Statement of Working Days
270.25.01.30	Maintain Construction Project Files and General Field Office Clerical Work
270.25.01.35	Perform Labor Compliance Activities
270.25.01.40	Approve Subcontractor Substitutions
270.25.01.45	Coordination
270.25.02	Perform Construction Contract Administration Work for Construction Period 2
270.25.02.05	Secure Lease for Resident Engineer Office Space or Trailer
270.25.02.10	Set Up Construction Project Files
270.25.02.15	Conduct Pre-construction Meeting
270.25.02.20	Prepare Progress Pay Estimates
270.25.02.25	Prepare Weekly Statement of Working Days
270.25.02.30	Maintain Construction Project Files and General Field Office Clerical Work
270.25.02.35	Perform Labor Compliance Activities
270.25.02.40	Approve Subcontractor Substitutions
270.25.02.45	Coordination
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270.25.80	Perform Construction Contract Administration Work for Construction Period 80 (Same activities and description as for other construction periods above)
270.30	Inspect Contract Item Work
270.30.01	Inspect Contract Item Work for Construction Period 1
270.30.01.05	Photograph Jobsite and Contractors' Operations
270.30.01.10	Inspect Contractor's Work for Compliance
270.30.01.15	Review and Document Contractors' Operations Relative to Safety Requirements
270.30.01.20	Prepare Daily Diary of Contract Operations
270.30.01.25	Prepare Punch List
270.30.02	Inspect Contract Item Work for Construction Period 2
270.30.02.05	Photograph Jobsite and Contractors' Operations
270.30.02.10	Inspect Contractor's Work for Compliance
270.30.02.15	Review and Document Contractors' Operations Relative to Safety Requirements
270.30.02.20	Prepare Daily Diary of Contract Operations

270.30.02.25	Prepare Punch List
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270.30.80	Inspect Contract Item Work for Construction Period 80 (Same activities and description as for other construction periods above)
270.35	Sample & Test Construction Material
270.35.01	Sample & Test Construction Material for Construction Period 1
270.35.01.05	Sample and Test Materials for Quality Assurance
270.35.01.10	Perform Plant Inspection for Quality Assurance
270.35.01.15	Perform Independent Assurance Sampling and Testing
270.35.01.20	Perform Source Inspection
270.35.02	Sample & Test Construction Material for Construction Period 2
270.35.02.05	Sample and Test Materials for Quality Assurance
270.35.02.10	Perform Plant Inspection for Quality Assurance
270.35.02.15	Perform Independent Assurance Sampling and Testing
270.35.02.20	Perform Source Inspection
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270.35.80	Sample & Test Construction Material for Construction Period 80 (Same activities and description as for other construction periods above)
270.40	Perform Safety and Maintenance Reviews
270.45	Process Relief from Maintenance
270.50	Prepare Certificate of Compliance with Environmental Mitigation Requirements
270.55	Perform Final Inspection and Recommend Acceptance
270.60	Administer Plant Establishment
<b>285</b>	<b>PREPARE AND ADMINISTER CONTRACT CHANGE ORDERS</b>
285.05	Prepare and Process Contract Change Order (CCO)
285.05.01	Prepare and Process Contract Change Order (CCO) for Construction Period 1
285.05.01.05	Determine Need for CCO
285.05.01.10	Design and Prepare Draft CCO
285.05.01.15	Process CCO for Approval
285.05.01.20	Process Payments for CCO Work
285.05.02	Prepare and Process Contract Change Order (CCO) for Construction Period 2
285.05.02.05	Determine Need for CCO
285.05.02.10	Design and Prepare Draft CCO
285.05.02.15	Process CCO for Approval
285.05.02.20	Process Payments for CCO Work
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285.05.80	Prepare and Process Contract Change Order (CCO) for Construction Period 80 (Same activities and description as for other construction periods above)
285.10	Provide Functional Support
285.10.01	Provide Functional Support for Construction Period 1
285.10.01.05	Perform Field Surveys for CCO
285.10.01.10	Staking for CCO
285.10.01.95	Provide "Other" Functional Support
285.10.02	Provide Functional Support for Construction Period 2

285.10.02.05	Perform Field Surveys for CCO
285.10.02.10	Staking for CCO
285.10.02.95	Provide "Other" Functional Support
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285.10.80	Provide Functional Support for Construction Period 80 (Same activities and description as for other construction periods above)

## **290 RESOLVE CONTRACT CLAIMS**

290.05	Review and Analyze Notices of Potential Claims
290.10	Prepare Supporting Documentation and Respond to Notices of Potential Claims
290.15	Prepare, Review, and Approve Claim Report
290.20	Conduct District Claim Meeting or Board of Review
290.25	Prepare for and Participate In Arbitration Hearing
290.30	Negotiate Claim Settlement
290.35	Provide Technical Support

## **295 ACCEPT CONTRACT, PREPARE FINAL CONSTRUCTION ESTIMATE, AND PREPARE FINAL REPORT**

295.05	Process Estimate After Acceptance
295.10	Prepare Proposed Final Contract Estimate
295.15	Prepare As-Built Plans
295.20	Prepare Project History File
295.25	Prepare Final Report
295.30	Process Final Estimate

## **300 PERFORM FINAL RIGHT OF WAY ENGINEERING ACTIVITIES**

300.05	Monument the Right of Way and Prepare Monumentation Maps
300.05.05	Perform Right of Way Monumentation Survey
300.05.10	Prepare and File Monumentation Maps
300.20	Perform Close Out
300.25	Prepare Relinquishment and Vacation Maps
300.30	Prepare Deed Package for Excess Land Transactions
300.35	Prepare Right of Way Record Map
300.35.05	Review Temporary Record Map
300.35.10	Delineate Excess Land Parcels
300.35.15	Verify & Post Conveyance Docs
300.35.20	Update Status of Excess Lands Disposition



## Appendix E: Glossary

<i>Term</i>	<i>Definition</i>
Activity	A discrete unit of work that produces some product or decision. For example, in XPM use, it denotes the lowest level in the Work Breakdown.
Capital Outlay Support	A somewhat loose term that implies the roadway projects that are funded by State and Federal moneys, program-coded in TRAMS as 20.10, 20.20, 20.30 and some 20.40. This term is replaced by Capital Project throughout this manual
Capital Project	A temporary endeavor undertaken to create a unique physical improvement to the transportation system in California. The word "project" refers to the work that is performed. Projects produce products.
Charge district	The charge district is the organizational entity that receives the benefit of the work.
EA	The Expenditure Authorization is a specific, tabled record maintained in TRAMS that identifies and authorizes a particular kind of budgeted work or expenditure. All EA's are coded to reflect needed budgetary or financing information and other statutory requirements.
OBS	The Organizational Breakdown Structure is a hierarchical description of the Department's organizational chart, which identifies the responsible person for a given resource as defined in the RBS.
PMCS	Project Management and Control System - a computer system to record and report on project information, schedules, locations, budget allocations, and dates.
Pseudo activities	In certain cases, it is helpful to allow addition of an activity to represent a small grouping of activities when reporting to each one might be onerous.
RBS	The Resource Breakdown Structure is a hierarchical breakdown of total resources which defines assignable resources such as personnel, equipment, facilities, or consumable materials.
Single Focal Point (SFP)	The District Division Chief for Program / Project Management.
Capital Project Management Council	A management forum, consisted of SFPs and program managers of major functions (i.e. construction, design, environmental, R/W, programming, planning, etc.)
Task	A discrete unit of work or summary of activities that, when completed, produce some product or decision. In XPM use, it denotes a unit of work that has lower level breakdown. It is a summary. Since an activity can become a summary task by adding lower level activities, these terms are relative to the discussion and may be used interchangeably in most circumstances.
Template	An outline or master plan of tasks and activities that can be modified for a specific project. The template can contain the usual set of activities for some type of project or it can contain all possible activities.
TRAMS	Transportation Accounting and Management System - a computer system for recording and reporting on expenditures of Caltrans
TRS	Time Reporting System at Caltrans. The computer system that most employees use to record the hours they have worked on each project.
WBS	The Work Breakdown Structure is a product-oriented hierarchy that organizes and defines the total scope of Capital Projects.

<i>Term</i>	<i>Definition</i>
Work package	A deliverable at the lowest level of the WBS.
XPM	Abbreviation for the software package eXpert Project Management that was selected for statewide management of Capital Projects.